Railway Age

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## An Unusual Record

INDICATIVE of the energy which has long characterized the American Railway Engineering Association is the record made by the committees on Subjects and on Personnel of Committees of the Board of Direction this year. In spite of the fact that the work of these committees involved the selection and assignment of more than 153 subjects, including 48 subjects assigned for the first time, and the selection of 645 men for service on these committees, this work was completed and the report printed and distributed to those appointed within two and one-half weeks of the close of the convention. As a result several committees have already arranged to hold meetings early in April to undertake their work for the year. This record is in marked contrast with the practice prevailing in most associations in the railway field and elsewhere owing to which 60 to 90 days ordinarily elapse between the close of one year's work and the inauguration of that for the new. The activity of the A.R.E.A. is made possible by the fact that its organization is a continuing one for while its executive officers change each year, this change is in large measure a promotion to the next higher office, the change in personnel on the board being confined ordinarily to the election of three new directors.

## Improving Employee Relations

THE Boston & Maine annual report for the year 1924 is unusual in many respects, not the least of which is the fact that it is one of the first, if not the first, annual report of a railroad, to present a constructive discussion of the problem of relations with employees. It is true that other annual reports have considered such matters as shop strikes and labor difficulties, but the Boston & Maine report goes much beyond this. In referring to the shop strike which was declared off on that road just a year ago, it does make this statement: "The efficiency and the quality of the work, as well as the output per man, are today at a higher point than for many years." In discussing the general question of employee relations, the report contains this significant statement: "It (the management) would fail in its duty alike to the property, to the public and to its own organization if it were to regard the building up of an effective co-operation as of less consequence than the technical problems of operation, maintenance and finance. Urgent as these problems are, under all circumstances, it remains permanently true that the labor and supervision cost is the largest item in the budget, and justifies, for this reason alone, if on no broader grounds, special attention to the proper basis for a service distinguished by voluntary interest and good will rather than a mere perfunctory discharge of assigned duties." Special attention is directed to educational work which has been encouraged, including foremen's clubs in the mechanical department, organized study groups in engine and shop service, and meetings in the interest of safety, fuel conservation and freight claim prevention. The work at several of the Railroad Y. M. C. A. branches is said to include "an increasing variety of instructive and recreational features." The employees' magazine, which was started a year ago, also receives favorable comment. "The management has furthered these developments," the report says, "in recognition of its share of responsibility for relations of confidence and mutual interest throughout the service, conducive to efficient and dependable operation." This is only another significant illustration of the growing and widespread interest which railroad managements are showing in developing a stronger spirit of intelligent and enthusiastic co-operation throughout their organizations.

## Economies from Consolidation

THE British railways did not have a particularly happy year in 1924. Traffic, both freight and passenger, declined and in order to pay regular dividends the railways had to make appropriations from reserves. Now they are faced with demands on the part of the unions for substantial increases in wages. They have countered these demands by asking for reductions just about sufficient to reimburse them for the amounts which they were forced to appropriate from reserves to meet dividends for 1924. The outcome of the wage controversy, however, cannot be foretold. It will probably have to be settled by the National Wages Board. As is generally known, the British railways were consolidated in January, 1923, into four non-competitive, regional systems. They have now operated two years under the amalgamation. Have great operating and other economies been effected? No—not noticeably so as yet. At the time of consolidation the *Railway Age* suggested that Britain's experience in this direction might prove a valuable guide in formulating a consolidation policy for this country. So far the experience of the British railways proves but one point, to wit, that the extensive economies claimed for consolidation are likely to be quite slow in materializing. Further watchful waiting will be necessary before any more definite conclusions can be reached.

## Traffic Problems of the Railways

WE publish elsewhere in this issue a letter entitled "Passenger Business and the Automobile" which seems to merit careful reading by railway executives and passenger officers. The writer of the letter believes that the railways have been making too little effort to stop the loss of passenger business to automobiles. He thinks that many persons now use automobiles for trips they would make by railroad if special round trip rates and more good advertising were used to show them the advantages of traveling by rail. The *Railway Age*, in calling attention in an editorial in its issue of March 14 to the enormous losses of passenger business the railways are suffering

because of increased use of automobiles, did not complain about these losses, but merely presented the facts because of their significance and the extent to which they affect the general railroad problem. Is there not, however, it may well be asked, considerable merit in the views expressed in the letter referred to? Are the railways doing all or anywhere near all that they might well do to arrest the loss of passenger business? It may also be pertinently asked whether they are doing all they might and should do to arrest the loss of freight business to motor trucks in territory which is outside congested areas and in which, therefore, the loss of freight means also a loss of net revenues. Railway officers in various parts of the country are giving increasing attention to these questions. They are questions that are becoming so important that they demand much more investigation and consideration than they ever have been given. They demand investigation, not only by the railways individually, but jointly. Neither the freight nor the passenger business of the railways has been increasing since 1920 as it did before. On the contrary, the passenger business has greatly declined, and the freight business was only slightly greater in 1923 than in 1920, and in 1924 was actually less than in 1920. Furthermore, freight business has not thus far in 1925 shown the increase that it seemed natural to expect in view of general conditions and prewar experience. These are strong indications that the railroads need to give increased attention to the problem of getting and holding more business as well as to the problem of handling it with increasing economy.

## *Making vs. Buying Shop Tools*

THE ingenuity of railroad men in devising ways and means to accomplish results, often with limited facilities, is generally recognized. This ingenuity is illustrated nowhere better than at locomotive and car repair shops and enginehouses in the construction of special tools, pneumatic devices, machines and other equipment necessitated by the peculiar requirements of the work in hand. The development of this equipment may well be encouraged; it offers an important opportunity to decrease maintenance costs—as long as it is not simply an imitation of more efficient standard equipment obtainable on the open market. The difficulty in cases of this kind (and they are numerous) is that new shop equipment must be charged to capital account, whereas the home-made variety can be built and the expense absorbed in shop operating costs. Many managements cannot finance all the new labor-saving shop equipment admittedly needed, and others are not convinced that the need for it is as great as stated. As a result, shop foremen who want certain machines must either make them or go without, and they often adopt the former alternative, utilizing a certain amount of scrap material, it is true, but running up a labor cost which is larger than appreciated and larger than necessary because of the lack of specially skilled men and special tools available to the manufacturers. Under these conditions the equipment built may be high in actual cost and expensive to operate. Home-made rivet furnaces, many of which are now in use, may be taken as an example of the equipment mentioned. An important railroad in the Middle West recently found it profitable to replace the home-made rivet furnaces at its principal shops by up-to-date manufacturers' equipment. This was done following air consumption tests regarding which the mechanical engineer of the road writes as follows: "Our tests showed an air consumption of approximately 300 cu. ft. per minute on our home-made furnaces. The ———— furnace reduced this air consumption to 25 cu. ft. per minute. We have found since the installation of these furnaces that we have been able to suspend the operation of an electric-driven air compressor of approximately 1,300 cu. ft. per min. capacity." Such a reduction in air consumption hardly seems credible but the facts are as stated. The average cost of power alone for operating an air compressor of the capacity mentioned is about six dollars an hour. Plainly it pays to make careful comparative tests and not go ahead blindly using inferior home-made equipment.

## Cost of Canal Transportation

THE agitation for large government expenditures for the development of inland waterways never ceases. From a transportation standpoint there are two kinds of waterways. First, there are deep waterways, such as the ocean and the Great Lakes, which have been provided by nature. To render them fully available it is sometimes necessary to build canals, as, for example, at the "Soo" and the Panama. Both these canals connect deep waterways provided by nature and their construction was warranted because they made more available and useful the deep waterways that they connect. The construction of such canals and the improvement of the harbors of deep waterways help to provide water transportation which is much cheaper than rail transportation.

The second class of waterways is those consisting of long inland canals and canalized rivers. It is quite evident that from a transportation standpoint their development raises entirely different economic questions and is likely to have widely different economic results. The claim long has been constantly made that such waterways can be developed at a cost and boats can be operated on them at rates which would make the total cost of transporting freight on them less than by railroad.

The *Railway Age* in past years repeatedly discussed the question of the relative total economic costs of transportation by canal and canalized rivers and by rail. We maintained that no convincing evidence ever had been advanced that freight could be more economically moved on canals and canalized rivers than on the railways of the United States, and that, in fact, all the available evidence indicated the exact opposite. European experience often was and still is cited, but such evidence is almost valueless because railway rates in this country have been and are so much lower than in Europe. We desisted a long time ago from presenting evidence and arguments upon this subject because it was branded by waterway enthusiasts as "railroad propaganda" and because we became confident that, excepting the Great Lakes, no inland waterways ever would or could be developed in this country which would take any considerable amount of freight from the railways.

However, occasionally evidence bearing on the question comes from some source which makes it impossible to call it "railroad propaganda" and to which, in the interest of sane dealing with the transportation problem, it seems desirable to call attention.

Governor Alfred E. Smith of New York can hardly be called a railroad propagandist. In his recent annual message to the New York Legislature Governor Smith gave some information regarding the expenditures that have been made on the New York State Barge Canal and the results which merit careful consideration by the people of the nation and those of states that are contemplating large expenditures on inland waterways.

Governor Smith recalled that up to 1883 the tolls collected on the Erie Canal had exceeded the state's expenditures on it by $42,600,000. The tolls were then abolished, but up to 1904 the state still had a credit balance of

about $20,000,000 from the canal. In the latter year the state adopted a program for improving and enlarging the canal to quadruple its freight carrying capacity. "The Barge Canal, including construction, terminals, grain elevators, repairs, maintenance, operation and payment of claims for damages," said Government Smith, "has cost the people since 1905 up to date $191,626,000; between 1905, when the first canal bonds were sold, up to 1924 inclusive we have paid in interest $39,880,387, making the total cost of the Barge Canal to date $230,881,014."

What effect has this large expenditure had on the business handled on it? Governor Smith shows that in the six years prior to 1883, when the tolls were abolished, the freight that passed through the canal averaged 5,434,474 tons annually. The new barge canal was opened for operation in 1919. In the six subsequent years the freight carried on the Erie Canal averaged 1,640,481 tons or less than one-third of what it was before the large expenditure upon it was made. Expenditures for "personal service" and "maintenance and operation" in 1925 are estimated by the State Department of Public Works at $4,182,696.

The statistics given above are all quoted from Governor Smith's message. Let us now see how much they show the public is paying in taxes to make possible transportation service on the canal. Annual interest at 5 per cent on its cost to date would be $11,544,000, and to this should be added the $4,182,696 for "personal service" and "maintenance and operation," making a total of about $15,727,000 annual expense to the taxpayers. Dividing this by 1,640,481 tons, the average amount of freight handled annually during the last six years, gives an average cost to taxpayers of $9.59 for every ton of freight moved on the canal. The length of the Erie Canal is 363 miles. Therefore, if every ton of freight shipped on it were transported its entire length the average cost to the taxpayers would be 2.64 cents per ton-mile (of course, the average haul was much shorter, and therefore the average cost per ton-mile much greater). This excludes anything for the rates charged by operators of the canal boats, and yet it is 145 per cent greater than the average freight rate per ton per mile of the eastern railways (excluding those of New England), which in 1924 was 1.08 cents. The canal handles nothing but bulky freight, while the average rate given for the railways includes their rates on all commodities from coal to straw hats. If we assume that the average rate charged by the boats on the canal was only one half as great as the average rate charged by the railways we arrive at the astounding conclusion that the total cost of transportation per ton-mile on the canal was at least three times, and probably was four or five times, as great as the average rate per ton per mile received by the railways running parallel to it.

Nor is even this all. Governor Smith states that trained engineers under whose direction and supervision the operation of the canal has been placed have estimated to the superintendent of public works "that to complete the canal to a point that would make unnecessary the enormous annual expenditures for dredging, complete the terminals, relieve sharp bends that interfere with navigation and do other essential things, will cost approximately $16,606,000. I am further informed at the office of the attorney general," he adds, "that there are pending against the state 751 claims for damage to water rights and privileges, appropriation of land and so on the face amount of which is $23,892,473."

There has been more money spent upon the Erie Canal than upon any other similar waterway in this country. That the railways do not need to fear its competition is shown by the small amount of freight it is handling. But in view of such facts as have been cited what becomes of the argument that canals and canalized rivers can be so developed as to handle freight at a lower economic cost than American railways? What would taxpayers all over the country say about other projects for constructing canals to "cheapen" transportation if they knew the huge amount it is costing the taxpayers of New York to provide a canal upon which the amount of freight being transported is less than one-third of what it was over 40 years ago?

# College Men on the Railroads

SOME editorials regarding the opportunities of college men on the railroads, which recently have appeared in these columns, have drawn forth diverse comment from our readers. For example, an important officer of one large system has written saying that of course the railways want college men, but that seniority rules and other conditions make it especially difficult to give them satisfactory opportunities and that these special difficulties ought to be pointed out. A young man in one of the universities who has been specializing on transportation subjects with the purpose of entering railroad service has written us that one of our editorials has so discouraged him that he is considering the abandonment of his intended railway career.

What are the facts regarding the opportunities of college men on the railroads? One means by which they may be indicated is by statistics showing how large a proportion of the present officers of the railways are college men. Such statistics have the disadvantage of indicating rather the opportunities that were afforded college men who entered the service some years ago than the opportunities afforded those who enter it now, but they do throw light on the question. Kenneth F. Burgess, general solicitor of the Burlington, presented some interesting information at the last meeting of the American Economic Association. This related to the officers of the thirty-two railroad systems which are represented on the executive committee of the Association of Railroad Executives and which operate about 168,000 miles of road. Mr. Burgess showed that 36.3 per cent of the presidents, 35 per cent of the higher operating officers, 13 per cent of the higher traffic officers, 87 per cent of the higher law officers and 21 per cent of the heads of the accounting departments of these railroads had attended college three or more years. The *Railway Age* has supplemented Mr. Burgess's study by ascertaining that 79 per cent of the chief engineers and 59 per cent of the chief mechanical officers of the same roads are college men. The figures as a whole are for 255 high railway officials, and of these 118, or 47 per cent, are college men.

Mr. Burgess developed in his study of the careers of 122 officers who were non-college men and 82 who were college men the following facts: The average age of the non-college men when they entered railway service was almost 18 years and that of the college men about 23½ years. It took the non-college men an average of almost 19 years and the college men an average of 13½ years to rise to "official positions" which, for the purposes of his study, were positions such as division superintendent, assistant general freight agent, general attorney, auditor in charge of an accounting department, etc. In consequence, the non-college men averaged 36.6 years old and the college men 36.8 years old when they reached official positions. In other words, it took the college men an average of 5½ years less, after they entered the service, to attain official positions than it did the non-college men. He showed that the average age of the non-college men now holding positions as presidents or heads of depart-

ments is almost 60 years, while the average age of college men holding similar positions is 52.6 years. It would appear, therefore, that college men have a chance to rise to official positions while as young, and a chance to rise to the highest positions while they are several years younger, than the non-college men.

These statistics certainly do not show that men with a college training have not been given a chance on the railroads in the past. The number of men who have entered the business with a college education is very small compared with the number who have entered it without such training, and yet almost one-half of all the higher officers are college men. Why, then, is the attitude of the railways toward college men criticised? It is being criticised partly because within recent years other leading industries have been making special efforts to get college trained men to enter their service, while most of the railways have not been doing so. It is a well known fact that toward the close of each college year numerous industries send scouts to colleges and universities throughout the country to "size up" prospective graduates and to try to induce promising young men to take employment with them, while at such times the railways are conspicuous because of the absence of scouts representing them. In a discussion during the recent convention of the American Railway Engineering Association, Professor Milo S. Ketchum of the University of Illinois stated that last year this university was visited by the representatives of 65 industries looking for men. He stated that at that time three representatives of the American Telegraph & Telephone Company were at the university interviewing students, and that a study made by this company indicated that a technically trained man would reach a position of responsibility in its service six years younger than a man who had not been technically trained, and that indications are this gap will rapidly widen to ten years. Regardless of what has occurred in the past, how can the railways hope to get their fair share of promising college trained men in future if they do not compete with other industries for them?

A second criticism made against the railways is that when college trained men do enter their service the roads do not give them special opportunities to qualify and advance as officers, while other industries do. The non-college employee who is willing to do the study and work required to qualify him for official duties certainly should be given just as good a chance as the college men. Many of the most broadly educated and able officers of American railways have risen from the ranks without college training. This should always continue to be the case. Merely because men have gone to college is no reason why they should be especially favored after they engage in business or professional work. The important thing to be considered, however, is the future welfare of the railroads. They need now and will continue to need in official positions men who know many things the knowledge of which cannot be gained merely by "practical" experience as well as the things that can be learned only by such experience. The average college man, when he engages in business or professional work, has a broader knowledge and better training than the average man of the same age who has not gone to college, and for the good of the railroad, if he is employed by one, he should be given full opportunity to advance as rapidly as his broader knowledge and training have fitted him to. The college man, when he enters a business or profession, is on the average about six years older than is the non-college man when he goes to work, and if his broader training and knowledge are not given consideration the years he has spent in getting them will be a handicap rather than a help to him and will be of no value to the company that employs him.

The *Railway Age* has been emphasizing the need for the railways to make greater efforts to get college men and give them better opportunities because it believes the railways need them and because there is strong reason for believing that, partly owing to increased competition from other industries, a relatively much smaller number of promising college men recently have been entering railway service than was the case in past years; and that the difficulties of getting college men to enter railway service, and also the difficulties of getting them to stay in it, have increased.

# Books and Pamphlets of Special Interest to Railroaders

*(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)*

### Books and Pamphlets

*Canada, the Atlantic to the Pacific,* by Canadian National Railways. 210 p. Pub. by Canadian National Railways, Montreal.

*Carload Shipments of Fruit and Melons from Stations in the United States,* 1920, 1921, 1922, *and* 1923. Statistical Bulletin No. 8, U. S. Dept. of Agriculture. 79 p. Pub. by Govt. Print. Off., Washington, D. C.

*Carload Shipments of Vegetables from Stations in the United States,* 1920, 1921, 1922, 1923. Statistical Bulletin No. 9, U. S. Dept. of Agriculture. 99 p. Pub. by Govt. Print. Off., Washington, D. C.

*The* 8:45; *Extracts from the Diary of John Skinner, a Commuter,* by Robert M. Gay. 154 p. Pub. by Atlantic Monthly Press, Boston.

*Employee Representation. The Pennsylvania Railroad Plan. The Joint Work of Its Officers and Employees.* 95 p. Pub. by the Pennsylvania Railroad Co., Philadelphia.

*In the Matter of Automatic Train-control Devices.* Decision by U. S. Interstate Commerce Commission. March 27, 1925. Docket 13413. 345-350 p. Pub. by Govt. Print. Off., Washington, D. C.

*The Railway Library: Engineering Essentials;* edited by Thomas H. Russell. 415 p. Pub. by Railway Training Institute, Chicago, 1925.

*The World of Today,* by Sir Harry H. Johnston and Dr. Haden Guest. 4 volumes. Pub. by G. P. Putnam's, London, 1924.

### Periodicals

*Coordinated Transport,* by L. C. Adcock. Shipper and Carrier. March, 1925. p. 12-15, 63.

*The Interchangeable Van Sweringens.* World's Work, April, 1925. p. 594-598.

*Ninety-Nine Years of Development,* by E. J. Pearson. Shipper and Carrier. March, 1925. p. 5-11.

*Remaking the Railroad Maps,* by Edward Hungerford. Saturday Evening Post. March 7, 1925. p. 26-27, 186, 188, 191.

*The Silent Revolution on the Railroads,* by John K. Barnes. World's Work. April, 1925. p. 673-678.

*Southern Pacific Empire, Texas and the Gulf,* by C. W. Barron. Barron's. March 30, 1925. p. 8.

*When Government Runs the Railroads,* by Sir Henry W. Thornton. Collier's. April 4, 1925. p. 1-2, 42-43.

*Krupp Turbine Locomotive.* Scientific American. April, 1925. p. 245.

*Southern Pacific's Empire,* by C. W. Barron. Barron's. March 23, 1925. p. 11.

*Uncle Sam Settles with the Railroads,* by Oliver P. Newman. American Review of Reviews. March, 1925. p. 282-286.

# Letters to the Editor

[*The* RAILWAY AGE *welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about* 250 *words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.*]

## The "19" Order is Safe

CHICAGO.

TO THE EDITOR:

I have read with keen interest the articles appearing in your issue of February 21, which articles were received in your contest on the use of the form "19" train-order. The experienced train dispatchers throughout the United States are practically of one accord in endorsing the "19" order for restricting purposes. There is no longer as wide a difference of opinion as in former years. The tendency is more strongly than ever before toward the use of the "19" order for restricting purposes, and the papers received in your contest showed this.

The writer was a most ardent opponent to the "19" restricting order until the practical use of it had clearly demonstrated its safety. There can be no sacrifice of safety, provided the instructions contained therein are properly carried out. The only example cited by Mr. McNaney to prove the defect in the "19" order was completely vindicated in the same paragraph by the statement that, "The engineman forgot about it". This, then cannot possibly be charged against the "19" order, but to the neglect and disregard of the instructions contained in the order. The writer could cite numerous cases where the "31" order failed to the same extent and for the same reason. Only recently a passenger train on a large Class I road was given a "31" wait order "in advance of the station" where the wait was effective. The engineman overlooked it and sideswiped the freight train pulling in on the passing track. In this case the dispatcher was taken out of service because the wait held up the passenger train five minutes and because the accident occurred. It was ruled that the order should not have been issued, regardless of the fact that this practice had been repeatedly invited by officers of the railroad.

The greatest handicap is placed on the use and success of the "19" order by unjustly criticising it and by applying special superseding instructions to afford excuses for the further curtailment of its practical use so that train and enginemen do not attach the same importance to a "19" order that they do to a "31" order. The trouble is not with the "19" order but with the ever-growing tendency to depreciate its importance and efficiency by the officers themselves, so that train crews are not only imbued with an erroneous idea of secondary importance of the order, but they are being supported with the supplementary instructions which usually follow when something has gone wrong.

Preach and teach the principle that the "19" order is every bit as important as the "31" order and the habit will soon be cultivated and inculcated so that not only will its safety be more and more agreed to, but its much greater efficiency for train movement become more universally recognized. Condemn and discipline the violator of the instructions contained in a "19" order with the same severity as the violator of a "31" order and I feel confident that those who are now able to cite rare instances where a "19" has failed will find plenty of instances where the "31" order has failed more frequently.

One of the most pronounced and evident logical reasons is that if the "19" order can be resorted to for clearing trains at junction points, the end of double tracks, etc., and to check the register for the train crew with safety, which is a national practice all over the United States, it cannot be consistently argued by those who condemn the safety of the "19" order that this practice should be permitted to prevail on their railroad. This practice places the burden completely and entirely upon but one individual, namely, the train dispatcher, and any and all checks that other employees may make in connection with a "31" order are eliminated. The train crew must rest its confidence entirely upon the man who gives them the register check.

Again I find that the "19" order is made use of to a greater extent from time to time for rear end protection, thus fostering a laxity of the strict obedience of flagging Rule 99. Train dispatchers practically without exception are voicing in no mistakable language that this shifting of responsibility for rear end flagging retards and interferes with the proper attention to the salient movements for efficient operation that are admittedly the train dispatcher's duties.

I hope nothing that I have said will be construed as an indication that I advocate or would condone laxity on the part of a train dispatcher or any other employee in the performance of any duty or function that might be assigned to him. Faithful, precise and effective performance on the part of railroad employees of any and all assignments is perhaps more important than pertains in any other occupation.

J. G. LUHRSEN, President,
American Train Dispatchers' Association.

## Passenger Business and the Automobile

NEW YORK.

TO THE EDITOR:

May a rank outsider, not a railroad man and on the other hand not a railroad hater, offer some comments on your interesting editorial (*Railway Age*, March 14) dealing with the loss of passenger traffic due to increasing use of motor cars.

This seems to me another case where the railroads grumble, gnash their teeth, or weep—but do nothing. And on all sides we hear the chorus—"What can be done?"

The railroads are selling one of the greatest commodities bought by the people—transportation. Yet they are strangely lacking in applying to it sale methods which prove successful with every other commodity.

Does the successful merchant sit down and just await a natural flow of customers? Does he give no thought or effort to halting decreasing business and turning losing into gaining sales volume? On the contrary he makes special drives with convincing advertising and brings the public into his establishment.

Why don't the railroads do the same thing? Thousands of motorists have abandoned using their cars on Saturdays and Sundays owing to the congested highway conditions on those days. Many of their families would enjoy a week-end rail trip to some attractive place. The writer has never yet seen a line of advertising addressed directly to this large class.

In making this suggestion the railroads must have something attractive to offer, just as the merchant does when he advertises a special sale. And by attractive the writer

does not mean an excursion train of old coaches leaving at an unearthly hour and running on a slow schedule, but a return to the good old-fashioned practice of reduced rates on round trip tickets. If you desire to take your family for a week-end trip, or even a longer journey, there isn't much price inducement when you have to double the one-way rate in making up the budget. Furthermore the line itself in many cases has no assurance that the passenger will not return over a competing system.

Every week-end during the summer the writer spends at his country home 110 miles from his office. Not a cent of reduction is offered on these weekly round trip tickets. Naturally, when possible, the motor car is used, although the train is actually preferred. The reduced round trip rate was sound in principle and practice. A return to it now would stimulate passenger traffic.

Among the vast multitude of motorists who congest our highways over week-ends or who make extended tours are many who would prefer riding in a comfortable coach or Pullman if the advantages of rail service were driven home to their minds. Yet the writer does not recall a single advertisement or folder on this subject.

When stocks (tickets) are moving slowly is not the time when the alert merchant reduces service, but when he redoubles selling effort by increasing his advertising, devising new and attractive inducements and filling his store (train) with customers.

It would pay the railroads to abandon their inertia and do the same.

MERCHANT.

# Should the Short Lines Be Taken Up?

HOUSTON, Texas.

TO THE EDITOR:

I desire to take issue with several ideas in respect to railroad matters presented by L. F. Loree, chairman of the board of the Kansas City Southern in a speech which he made at a dinner given to him by business men of Beaumont, Texas, on the evening of March 5. Mr. Loree, of course, is entitled to hold and likewise to express his opinions. Nobody else, however, is required to agree with him.

Among other views expressed by him, he stated: "There are in the United States some 253,000 miles of railroad. Because of the exhaustion of the resources they were built to serve, construction of competing lines of superior character, the destructive effect of automobile competition and other circumstances, there are as a minimum 30,000 miles that should be taken up and abandoned."

Mr. Loree's view in this connection is interesting but unconvincing. The mileage referred to is equal to almost double the entire mileage of all railroads in Texas, and would stretch ten times across the United States from New York to San Francisco. It includes a multitude of small railroads serving thousands of towns, cities, communities, farms, mines, manufacturing plants and other industries, and in the aggregate an enormous population, referring only to communities and industries local to such lines and wholly dependent upon them for heavy transportation. It is safe to assume that a belt of territory extending on an average of ten miles back from each side of the tracks of these lines is served by them. If so, the territories dependent upon these 30,000 miles of railroad aggregate about six hundred thousand square miles, an area more than double the size of the state of Texas. It is also safe to assume that each mile of these railroads, with its proportion of equipment, represents an investment of $25,000 per mile, and that the local amount invested in them represents approximately $750,000,000.

It is probably safe to assume further that the mere land embraced in the 600,000 square miles of territory served by these railroads is worth ten dollars per acre. If so, the value of such land alone equals $3,840,000,000. It is also safe to assume that the several thousand towns, cities, communities, farms, mines, manufacturing plants and other industries located in the territory served by these lines represent improvements equal to ten dollars per acre for the entire area, aggregating a sum equal to that last stated. The total property values dependent upon the railroads referred to exclusive of the investment in the railroads themselves, equal $7,680,000,000. If we assume that a population of only 10,000 persons is served by each hundred miles of these railroads local to them, the aggregate population wholly dependent upon them for heavy transportation numbers three million people.

To scrap these railroads would mean to turn back again into wilderness an area twice as large as Texas, to deny the conveniences of transportation and of life to several million people and to impoverish those people by destroying or heavily impairing the value of over seven and one-half billion dollars worth of their property. Before so frightful a blow is struck at a country and people, might it not be well and wise to inquire the object of this terrible sacrifice?

This question perhaps raises the necessity of discussing two new issues recently created by law, which, perhaps to the mind of Mr. Loree, opposes the interest of the large and successful railroads against the small and weak, viz:

Mr. Loree in his speech announced dissatisfaction with the recent range of prices for railroad securities listed on the New York Stock Exchange, and inquired "what is the cause of this calamity, fraught as it is with peril to the country?" He had the answer already written out, and read it. He declared, "It is due entirely and solely to the unceasing burdensome and destructive legislation of the federal congress and the state legislatures." He then named a list of laws that merit deep damnation and included upon his schedule the Transportation Act of February 28, 1920.

What, from his standpoint, is wrong with that law? Not much—but enough: It takes away from the great and prosperous trunk lines the power they heretofore enjoyed to allot to weak lateral lines the proportions of through rates the trunk lines are willing to concede to the short lines, and vests in the Interstate Commerce Commission jurisdiction over that subject, with a mandate that in dividing rates applicable to the movement of traffic interstate over several lines among the several participating carriers, proportions accruing to them respectively shall be related:

> "to the efficiency with which the carriers concerned are operated, the amount of revenue required to pay their respective operating expenses, taxes and a fair return on their railway property held for and used in the service of transportation and the importance to the public of the transportation services of such carriers, and also whether any particular participating carrier is an originating, intermediate or delivering line, and any other fact or circumstance which would ordinarily without regard to the mileage haul entitle one carrier to a greater or less proportion than another carrier of the joint rate, fare or charge."

Moreover, the act allows the commission to set up 6 per cent as a fair standard of return on railroad investments for lines long and short, and where by reason of insufficiency of traffic, lines do not earn such standard return, it vests the commission with power to apportion to the weak lines proportions of through rates higher

than heretofore were allotted to them by the strong lines, the intended effect of which is to bring up the revenues of lines heretofore weak and to bring down the revenues of lines heretofore strong, to or toward the fixed standard of return.

Mr. Loree's reaction to this law is not only to denounce the Congress that passed it, but a proposal to murder the 30,000 miles of railroad that will benefit by it.

Mr. Loree errs. The interest of the country is not served by the continuation of a situation where some dollars devoted to the public service, such as those of the Texarkana & Fort Smith Railway Company, are paid 17 per cent per annum by the public, while the faithful dollars of other railroads that work equally as hard to serve the public, invested at points less favored by nature and good fortune, receive nothing at all per annum, and where one section of the public enjoys the best character of transportation facilities while another section has to put up with the worst, and some large sections with none at all.

The Supreme Court of the United States (in A. C. & Y. R. R. vs. United States, 261 U. S., 184) recently negatived the idea advanced by Mr. Loree. In that case the great court, interpreting the provisions of the Act relating to divisions of through rates said:

"To preserve for the nation substantially the whole transportation system was deemed important. To accomplish this, two new devices were adopted: The group system of rate making and the division of joint rates in the public interest. Through the former, weak roads were to be helped by recapture from prosperous competitors, of surplus revenues. Through the latter, the weak were to be helped by preventing needed revenue from passing to prosperous connections. Thus, by marshalling the revenues, partly through capital account, it was planned to distribute augmented earnings largely in proportion to the carrier's needs. This, it was hoped, would enable the whole transportation system to be maintained without raising unduly any rate on any line."

It would be interesting to know whether, since the decision quoted, Mr. Loree favors "scrapping" the Supreme Court also. If so, he errs against the interest of the large lines as well as of the short lines. For if the federal act takes out of the hands of powerful railroads exclusively the allocation of proportions of rates applicable to the movement of freight interstate over several lines, and authorizes the commission to divide such rates among the interested carriers on bases that recognize the right of the weaker lines to live, it also imposes on the commission the duty to fix the rates so high that the larger lines will earn compensatory revenue.

If, therefore, the law, in regard for the interests of the public served by 30,000 miles of weak lines as well as for the capital invested in those lines, contrives a process by which proportions of rates larger than heretofore shall be passed to the weak lines by the strong lines, it calls upon the commission to fix and the entire public to pay rates for transportation that will compensate the strong lines for whatever they yield to the weak lines if calculated to impair their revenues below the standard return. "It is not true," said the Supreme Court in the New England Divisions case, that this process "compels the strong railroads to support the weak." No part of the revenues needed are paid by the strong lines to the weak lines, the court declared, but all the revenues for both strong and weak lines are paid by the community. Which is to say, that the idea of destroying the weak lines in order to preserve intact the revenues of the strong lines is not only unfair, but unnecessary.

Another issue recently arisen, and due no doubt in time to attain a climax, between the powerful and successful railroads on the one hand and the weaker lines on the other, also grows out of the Transportation Act of February 28, 1920:

This law (known as the Esch-Cummins Act) contains a mandate directed to the Interstate Commerce Commission requiring the commission as soon as practicable to prepare a plan for the consolidation of the railway properties of the United States into a limited number of systems. That plan is now being formulated by the commission, and in due time will be announced. The law also contains a section permitting progressive consolidations by voluntary action of the carriers pending the commission's consideration of its plan.

One of the principal objects of the law was to provide for the consolidation of the weak lines with the strong lines to the end that the weak lines might be preserved alive and efficient for the service of the public. On January 13, 1925, at a discussion of this subject before the Interstate Commerce committee of the United States Senate, Senator Cummins, one of the authors of the law, said:

"There was one great concern, when we formulated the act, to take care of the short lines and to keep them running in the service of the people. That is the object of consolidation, and I think it is the one thing that will determine whether we are are to have public or private ownership."

But some interests that have acquired large and successful railroads are opposed to the absorption of the weak lines into the general scheme of consolidation now being worked out. Mr. Loree apparently thinks that the larger lines should combine with each other, but that the very consideration stated by Senator Cummins as the main underlying purpose of the law, containing the chief public benefit designed to be effected by the law, namely the absorption of the short lines into the strong systems, shall be avoided, and to that end, since, if the short lines endure the commission may require their absorption, he now seriously proposes to knock the short lines on the head. Evidently the policy of "live and let live" has no place in his philosophy. The owners of short lines of railroads throughout this country, particularly those that compete or threaten to compete with sections of the large lines and the public served by them, will do well to stand on guard.

The question is, how will the public and the public servants stand with regard to the Loree policy? It corresponds to the practice pursued by certain ancient tribes who put to death the weak and defective members of their households to the end that they might not prove impediments to the vigorous and strong.

The fact that this policy applied only a few decades ago, would have required the scrapping of the Texarkana & Northern railroad, then a short lumber line organized by William Buchanan to log his saw mill at Texarkana, but which was afterwards developed into the Texarkana & Fort Smith railway (the Texas end of the Kansas City Southern) and saved to public usefulness and a splendid income by its extension to deep water at Port Arthur, together with a multitude of similar instances that prove that the short line of today may be the trunk line of tomorrow, weighs nothing with Mr. Loree or with that school of thought that apparently has come to fancy that the American guarantee of the right to life, liberty and happiness applies only to the prosperous among our citizens. They, having arrived, are entirely willing that the door of opportunity shall be locked against all new-comers.

Nothing could be bolder than the Loree announcement of this idea at Beaumont. What will the public say? I believe that the public only needs to understand in order to condemn the proposal.

The public that heard and read Mr. Loree's speech also observed doubtless with more interest than approbation his declaration that: "Looking then to the future, I suggest that we should not undertake new construction

unless the reason therefore is the unquestioned need of the community."

The "need" of the community is one thing, and the "unquestioned need" is another. It probably never will be possible for any one to project the construction of new railroads anywhere in the United States, particularly in competitive territory, the necessity for which, however great, will not questioned by some one. Many certificates of public convenience and necessity have been granted for the construction of new railroads or railroad extensions in the United States since the passage of the Esch-Cummins bill in 1920. In almost every instance where such new construction penetrated territory already occupied by an existing railroad the latter prosecuted a vigorous protest before the commission, and invariably questioned the necessity for the proposed new construction. Mr. Loree's idea would prohibit the construction of any new railroad or the extension of an existing railroad except by unanimous consent. Such is not the law and such is not the view of the Interstate Commerce Commission.

Mr. Loree's view assumes substantially that the transportation system of America is finished except for additions and betterments to existing lines. It in effect also proposes to allow existing railroads a monopoly within the territories occupied by them respectively. There is nothing in the law that warrants this view.

The fact is, those sections of the law, which render railroad construction in the United States upon the initiative of builders, without the sanction of the Interstate Commerce Commission, a crime, are anomalous to American ideals, and in view of the many expressions lately emanating from public men, organs of public opinion and the attitude of the public, it is to my mind questionable whether those sections of the act will long remain a feature of the law. An enormous area of the United States, particularly west of the Mississippi river, remains undeveloped and will always remain undeveloped unless provided with railroads. Many railroads, particularly among the short lines, have never been completed according to original plans. Many such railroads that are weak can be made strong by consistent extensions, just as occurred in the case of the T. & F. S. railway 30 years ago. The Kansas City Southern itself, while since its original completion, never regarded as a constructive line, lately applied to and received from the Interstate Commerce Commission a certificate authorizing it to extend one of its branches into highly competitive territory already occupied and served by other railroads.

The people of the United States not only disbelieve in the destruction of railroads, but believe in the construction of railroads. They believe in the principle of competition, and railroad men who boldly announce their desire to destroy competition by the destruction of possible competitors are merely laying a predicate for the revival of public dis-esteem, suspicion and super-regulation which some of us fought so hard to allay one or two decades ago.

I want to say in conclusion, however, that so far as I have observed, Mr. Loree stands alone among the railroad men of large stature in this country, in respect of the views advanced by him at Beaumont, commented upon in this article. I read the annual statistical issue of the *Railway Age*, refrered to by Mr. Loree in his speech, which contained the answers of a number of prominent leaders in the railway world to a list of ten questions propounded by the editor of the *Railway Age* in regard to the current outlook for railroads and various matters related to the railroad situation. The list of those responding included such great railroad men as C. E. Schaff of the Katy, W. B. Storey of the Santa Fe, Hale Holden of the Burlington, J. E. Gorman of the Rock Island, W. R. Scott of the Southern Pacific, C. H. Markham of the Illinois Central, L. W. Baldwin of the Missouri Pacific and Carl Gray of the Union Pacific. Without exception, as I recall, the views of these distinguished executives were full of optimism as regards the present and of faith as regards the future. Mr. Loree stood solitary and alone in his gloom. He alone perceived that "calamity fraught with peril" overhangs the country, and he alone entertains the idea that the destruction of 30,000 miles of railroad and the suspension of all further construction will improve the situation. The very week in which he delivered his speech, the Colorado & Southern caused to be organized and filed an application at Austin for a charter for a subsidiary company to build 200 miles of new railroad in northwest Texas, extending into territory partly served by existing lines.

R. C. DUFF,
President, Waco, Beaumont, Trinity & Sabine Railway.

# Are Railroads Different?

NEWARK, N. J.

TO THE EDITOR:

Is there a difference between railroads and other business institutions? Should railroad employees make an effort to get business for their railroads?

The writer is not employed by any railroad, consequently does not know how railroad employees are instructed. However, it seems to me that if I were owner or manager of a railroad I would instruct my employees to endeavor to take an interest in the business of the railroad and not let business go haphazard as it seems to go now.

For example, the other day I called up the general office of a large railroad company that does considerable business in the Metropolitan district. I asked for the freight department and told the man who answered that I wanted to ship a 200-pound box to Buffalo and expected the railroad company to handle the job complete from my office to its destination. At least I expected the employees to take sufficient interest in the matter to instruct me as to what to do. It is very seldom that I ship anything by freight and am therefore not "onto the ropes."

The employee in the freight department replied: "We don't do draying work. Hire a drayman and have him haul the box to us." I asked if he could recommend a drayman and he answered sharply: "No."

After 40 cents' worth of telephoning and more valuable time I managed to secure a drayman and I left it to the drayman's judgment as to which railroad should haul the freight. The above company did not get the business. Just why, I do not know but it surely would have gotten the business had the clerk been more agreeable and told me what to do.

It seems to me that all railroad employees should be instructed to "boost" and try to get business for their own railroads. It is to the employee's advantage as well as that of the employer to have plenty of business so that profits will be high and so that wages can be increased. It is my honest belief that other businesses are more efficient in this respect than are railroads. W. F. SCHAPHORST.

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THE REPORT of the results of group life and accident insurance on the Southern Pacific for the year 1924, shows payments of death and disability claims to employees aggregating about $1,000,000. The total amount of insurance provided for in the Southern Pacific contract is about $120,000,000.

# Labor Leader or Capitalist—Which?

*An editorial article outlining the shifting viewpoint of Warren S. Stone*

A BATTLE royal is going on between Warren S. Stone, the head of the Brotherhood of Locomotive Engineers and its subsidiary financial and industrial institutions, and John L. Lewis, president of the United Mine Workers of America. The nature of the controversy is generally known—Mr. Stone's mines are being operated with non-union employees and are paying less than the union scale of wages, Mr. Stone contending that the B. of L. E. mines cannot be operated profitably if union wages are paid. Trade unionists in other fields are aware of the scandal created by this controversy and are endeavoring to bring the opponents to a peaceful agreement. Before this takes place it might be well to examine this particular case from the standpoint of labor union policy and its possible effect on future dealings between railway unions and railway management. In brief, will Mr. Stone carry his new point of view over into the railway field, where he ceases to be an employer of labor and becomes a representative of the employees?

The Coal River Collieries, which is the property involved in this controversy, is owned by members of the Brotherhood of Locomotive Engineers. It is located in the non-union West Virginia-Kentucky field. In a recent issue of The Nation, Messrs. Lewis and Stone were asked to state their respective positions. Mr. Lewis's statement, as it appeared in that journal, follows in part:

> In a joint conference of miners and operators from the central competitive field, composed of western Pennsylvania, Ohio, Indiana and Illinois, held in Jacksonville, Florida, in February, 1924, an agreement was reached which extended the then existing wage agreement until April 1, 1927. Immediately, Coal River Collieries, whose mines are in the non-union territory of southern West Virginia and northeastern Kentucky, joined with the non-union coal companies in an assault upon the Jacksonville agreement. Up to that time Coal River Collieries had employed union miners and paid the union scale in the West Virginia mines, but had operated its Kentucky mine non-union. The latter mine is still being operated non-union.
>
> Mr. Stone, like other non-union operators, demanded that his employees take a reduction in wages. The United Mine Workers of America refused. Mr. Stone closed down his West Virginia mines rather than pay the union scale. He threw hundreds of men out of work, knowing that unemployment meant starvation and suffering for their families. Next, Coal River Collieries imported strike-breakers from the non-union fields of Virginia, Kentucky and Alabama to take the places of the union miners. Then the union miners were evicted from their homes. Their families and belongings were thrown out upon the roadside or hillside in the dead of winter, with no place to go. One hundred and three families were thus evicted last month, when the weather in the West Virginia mountains was bitter cold. The company refuses to permit these union miners to work in its mines unless they accept the reduced scale of wages.....
>
> There is no merit in Mr. Stone's statement that Coal River Collieries cannot pay the union scale. Other coal companies pay the union scale, many of them less fortunately situated than Coal River Collieries. Only non-union coal operators refuse to pay the union scale of wages. Efficient, businesslike management and operation will enable any coal company easily to pay union wages and make money.
>
> It is extraordinary, indeed, that Mr. Stone, professing to be a trade unionist, casts aside the fundamental principles of trade unionism by refusing to negotiate a contract with the miners' union. He has discarded the principle of collective bargaining, upon which the entire structure of trade unionism rests, and has adopted the methods that have made non-union coal fields a menace to organized labor for many years.

In a previous challenge to Mr. Stone, Mr. Lewis said:

> Your company occupies no different position in this matter than any other of the thousands of coal companies which have agreements with our organization. The United Mine Workers cannot be responsible for problems of management in which they have no voice. The question of efficient management and low cost production to enable you to remain in the market with competing companies is one that must be dealt with by your corporation. It is a problem that forever confronts one who elects to become a coal operator.

This appears to us to be the typical trade union point of view in any wage controversy, viz., that the wage demanded by the union must be paid regardless of the financial condition of the employer. In the same issue of The Nation Mr. Stone presented his side of the case by clippings from a magazine called the Right-O'-Way, which is circulated among the stockholders of the Coal River Collieries, in which he says, among other things:

> Previous to December 1, 1924, only one large mine and a few small mines were successful in making an agreement with the union, at a modification of the Jacksonville scale, which was of material benefit to the operators. No such concession was offered to us. It was "Sign the Jacksonville agreement with all that it demands or fight!" We put into effect the co-operative plan, the same as we have in our banks. The miners working on the property are stockholders in the property and share in its earnings. We feel sure there are no better satisfied men employed anywhere than in the Coal River Collieries. . . .
>
> There is no trouble of any kind existing between the company and the employees. The only trouble that has existed at any time was due to the work of professional agitators who were sent into the field to create trouble. The report that the company is employing strike-breakers is untrue—not a single man has been imported.

Mr. Stone's position is apparently that of the ordinary employer of labor who is faced with wage demands which would not allow the stockholders of his company any share in the proceeds of the business.

However, upon looking into his record it would appear that his attitude that the wage rate must depend upon the profitableness of the business is of quite recent growth—in fact only just as old as the B. of L. E.'s excursion into capitalistic enterprise.

As short a time ago as February, 1921, Mr. Stone joined with other railroad labor leaders in opposing wage reductions on two insolvent railroads—the Atlanta, Birmingham & Atlantic and the Missouri & North Arkansas. Whether or not these railroads could operate was dependent upon their securing reductions in wages commensurate with their ability to pay. The argument presented by the unions at that time, in which Mr. Stone's organization joined, was that the financial condition of the roads had nothing to do with the reasonableness of the wage rates.

Nor at the time of the passage of the Adamson law did Mr. Stone have the same advanced point of view as he has now. On May 10, 1916, was issued from the headquarters of the Transportation Brotherhoods in the B. of L. E. building in Cleveland, Ohio, and published in the Locomotive Engineers' Journal a lengthy statement of the unions' attitude in the eight-hour day controversy. This statement included among other things the following:

> It seems to us that the duty of the carriers to grant proper wages and conditions to their employees is a primary one and independent of the question of rates. It is manifestly unfair to raise the question of rates in order to block the discharge of their duty to their employees, and in the negotiation of wages this fact should be kept scrupulously in mind.

In the Locomotive Engineers' Journal for March, 1916,

was published another statement, issued by the same authority from the headquarters in the B. of L. E. building, which said among other things:

*There is no other business* [i.e., except the railroads] *that is not at perfect liberty to adjust its revenues to meet its cost of operation.* The fact that the railway companies must first secure authority from the Interstate Commerce Commission to raise rates places them in a different position entirely from the remainder of the business in the country. This, however, is not the fault of the employees, and it is wholly unfair to expect that approximately eight million railway employees and their dependents must sacrifice their interests to the general betterment and welfare of the remainder of the population. Why should not the railroad companies be permitted to increase rates to meet legitimate costs, the like of which had to be met in the same way by every other industry?

The italics in the paragraph above are ours. This sentence serves to show the difference between Mr. Stone as a trade unionist and Mr. Stone as an employer of labor. It would be an advantage to know if he intends to be consistent in maintaining this latter view.

Indications are that he does not. The principal one of these is the character of the journal issued under the auspices of the Brotherhood of Locomotive Engineers. Here is an organization, supposed to be one of the most conservative in the trade union field and one which has branched out more than any other into capitalistic enterprise, and yet there is perhaps no other similar publication which is so completely radical in its treatment of political and economic matters as the Locomotive Engineers' Journal, this organization's official magazine.

Mr. Stone himself restricts his utterances in it generally to little homilies on the advantages of thrift and the investment of surplus funds in B. of L. E. enterprises. However, the other pages, which Mr. Stone does not write, but for which he must accept the responsibility, are quite different. In them the campaign for the Plumb plan goes merrily on—in spite of the fact that the B. of L. E. bank has interested itself in railroad securities. How can President Stone square the editorial policy of the Journal with his point of view as expressed in Labor, when the B. of L. E. bank had railroad bonds to sell? He was quoted as follows:

"Every locomotive engineer, every fireman, every conductor or mechanic who bought one of those bonds," writes President Stone, "had a sudden added interest in the railway. He was a creditor. The first interest of the creditor is in the solvency of the debtor. The workers of the International Great Northern who hold its securities will do their level best to see that it gets and gives good service, because that way prosperity lies."

In the interview with Mr. Stone, published in Labor, in which the above statement appears, his view of the labor problem is outlined as follows:

Finally President Stone enumerates some of the wider effects which labor banks have on the public as a whole. Chief of these is the fact that labor banking is the most striking evidence of a new phase in the development of organized labor and the relations of the different elements in society.

The first cycle in this evolutionary process was the period of class consciousness, when the main purpose of labor's activities was to organize and create a sense of solidarity necessary to bargain for better working conditions.

The second phase, in which many unions are still involved, is a defensive struggle for the principle of collective bargaining, of this phase Mr. Stone writes:

"This is a period of warfare. It involves the use of force, sometimes economic and sometimes physical, on both sides. It is commonly said nowadays that collective bargaining has won its place in our industrial life. That is perhaps questionable, so long as there are establishments trying to enforce the open shop. Until, however, collective bargaining is recognized as the established right in any industry, organized labor in that industry has not passed the second phase.

"The third cycle lies in constructive development toward a system of co-operation rather than war. The most striking evidence of this phase is the labor bank."

In this connection, Mr. Stone quotes Prof. T. N. Carver of Harvard University as saying:

The labor movement in this country is passing out of the primitive fighting stage, and passing into a stage in which it is concerning itself with the higher strategy of maneuvering for permanent advantage. The labor leaders of no other country show any sign of being aware of the first principles of the higher strategy. They are not even encouraging laborers to become their own capitalists, or to get possession of the machinery of production by the one effective method of purchase.

Mr. Stone's view seems to be that as soon as the right of collective bargaining is freely admitted the stage of co-operation enters. His union is recognized all over this country and has been for a good many years. Whereupon he goes out and boosts for LaFollette, reduced railway valuations and government ownership.

We agree with Mr. Stone's implication that there is need for co-operation in the railroad field. We regret that it is being delayed by him and other labor leaders who are putting their political activities and their campaign for government ownership as obstacles in its path.

# Wood Preservation Reduces Santa Fe's Tie Renewals

THAT the Atchison, Topeka & Santa Fe is obtaining progressively increasing returns from its consistent adherence to a program of tie preservation is demonstrated in the latest statistics of tie renewals on that system. Thus in the table below it will be seen that the renewals for 1924 average 115 per mile of track, a figure that is lower than that for any previous year.

RECORD OF TIE RENEWALS ON THE ATCHISON, TOPEKA & SANTA FE SYSTEM

| Years | Total miles | Total ties inserted for renewals | Total ties inserted per mile of track | Average No. of ties inserted per mile of track for five year period |
|---|---|---|---|---|
| 1898 | 8,185 | 2,751,849 | 336 | ... |
| 1899 | 9,028 | 2,246,250 | 249 | ... |
| 1900 | 8,804 | 1,687,537 | 192 | 229 |
| 1901 | 9,368 | 1,557,880 | 166 | 210 |
| 1902 | 9,557 | 1,954,823 | 204 | 215 |
| 1903 | 9,768 | 2,352,502 | 241 | 228 |
| 1904 | 10,237 | 2,770,306 | 271 | 234 |
| 1905 | 10,885 | 2,788,378 | 256 | 251 |
| 1906 | 11,637 | 2,291,997 | 197 | 263 |
| 1907 | 11,694 | 3,364,921 | 288 | 267 |
| 1908 | 12,169 | 3,666,798 | 301 | 272 |
| 1909 | 12,601 | 3,690,633 | 293 | 286 |
| 1910 | 13,379 | 3,758,984 | 281 | 273 |
| 1911 | 13,889 | 3,738,854 | 269 | 251 |
| 1912 | 14,488 | 3,192,585 | 220 | 228 |
| 1913 | 14,766 | 2,850,823 | 193 | 213 |
| 1914 | 15,293 | 2,728,629 | 178 | 200 |
| 1915 | 15,400 | 3,191,823 | 207 | 187 |
| 1916 | 15,517 | 3,118,941 | 201 | 180 |
| 1917 | 15,661 | 2,483,651 | 158 | 173 |
| 1918 | 15,931 | 2,456,203 | 154 | 164 |
| 1919 | 16,087 | 2,302,952 | 143 | 153 |
| 1920 | 16,899 | 2,753,673 | 163 | 153 |
| 1921 | 16,912 | 2,514,325 | 149 | 148 |
| 1922 | 17,005 | 2,693,905 | 158 | 142 |
| 1923 | 17,346 | 2,229,201 | 128 | ... |
| 1924 | 17,709 | 2,046,054 | 115 | ... |

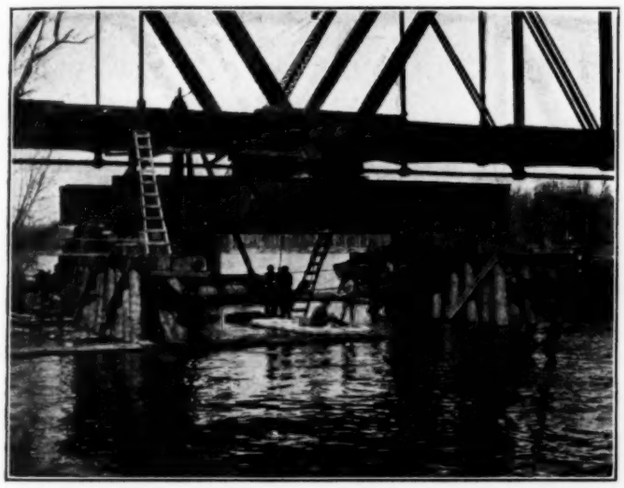
However, the cumulative effect of good practice in the preservation and protection of the ties is demonstrated even more emphatically in the column of five-year averages at the right side of the table. The figures in this column are obtained by averaging the average renewals for each year with the average renewals for the two years previous and the two years following, a scheme which eliminates the effect of minor variations in renewals from year to year and, therefore, brings out the general trend of the renewals more clearly. In this column, it is seen that from 1909 to 1922 (the latest year for which the five-year average may be calculated) there has been a steady decrease in the average annual tie replacements from 286 to 142, or a reduction of over 50 per cent.

# Rebuilding the White River Bridge*

*Reconstruction of piers which were failing because of defective foundations involved interesting problems*

By A. S. Armstrong
Superintendent, Bates & Rogers Construction Co., Chicago

IN 1853 a railroad which was incorporated as the Memphis & Little Rock was projected with these two cities as terminals. The line was built and put in operation in 1859 and by 1862 it was complete except a gap of 45 miles from Devalls Bluff to Madison. After the Civil War the road received government aid and a contract was let to build a bridge across the White river at Devalls Bluff. This was done in 1870 and in April, 1871, the



**Falsework in Place for Pier 5. Preparations to Dynamite Pier Below Water so Material Can Be Removed with Orange Peel Dredge**

two ends were connected. The road was sold to the Choctaw & Memphis in 1898, and it eventually became a part of the Rock Island lines in 1904.

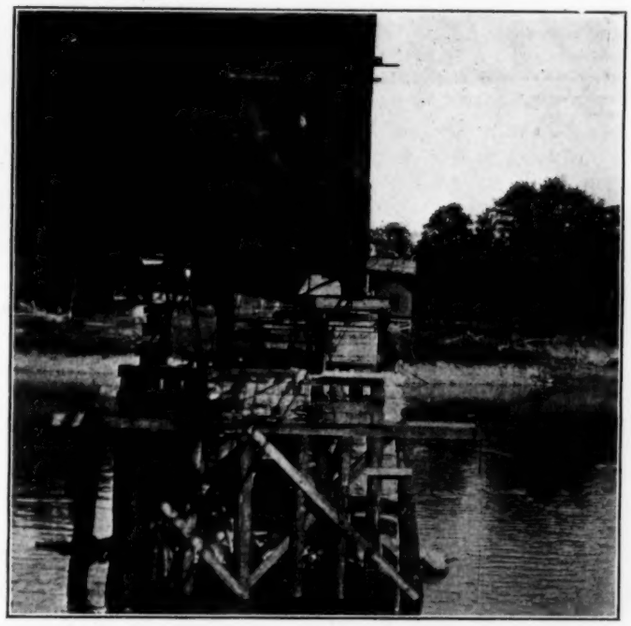
The original construction of 1870 consisted of three 150-ft. combination timber and iron Howe truss spans and one 220-ft. draw span with an unknown length of pile trestle approach. The spans were supported on masonry piers. It was not an easy task to bridge a stream of this character where the current is swift, even at low water and where the fluctuations between high and low water are as marked as in this stream, but that the engineers of that day did their work well, is evidenced by the fact that these piers stood for 50 years through ever-changing conditions and increased loadings.

### Renewed with Second-Hand Spans

In 1900 when the road passed into the hands of the Choctaw, Oklahoma & Gulf, combination spans were replaced with steel spans. New steel had been ordered but was used elsewhere, so it was decided to use such second-hand spans as were available, but there were of unequal lengths and none of the exact length required, namely, 146 ft. 4 in., 147 ft. 11 in. and 150 ft. 2 in. To use them it was necessary to load the piers eccentrically. Several courses of stone were removed and the tops of the piers corbelled out.

The Rock Island has since rebuilt the approaches so the structure consisted of 92 panels of ballast deck pile trestle on the east approach, a 220-ft. swing draw span, three pin-connected through truss spans and 52 panels of ballast deck trestle on the west approach. The total length of structure is 2,690 ft.

The steel spans were of E-35 design, but were strengthened in 1910. Unfortunately in the various changes of ownership, plans of the construction of the original foundations were not turned over to the bridge department of the Rock Island, so nothing was definitely known as to their depth or character and when the piers commenced to show weakness in 1920 the only explanation available was that of scour in the river. However, at that time the cause could not be ascertained as the water was at a stage



**Spans Supported on Jacks at Pier 4 Ready to Receive Girders to Carry the Spans**

considerably above low water and there was no evidence of scour, as rip rap originally placed was still in place around the piers. Due partly to the eccentric loading, cracks began to appear in and below the bridge seat of Pier 5. Immediate measures were taken to overcome this condition. The local bridge crews bound the top of the piers with steel cable, which offset to some extent the disrupting forces. However, late in the summer of 1921, inspection showed that Pier 4 had moved east 14 in., 3 in. by leaning at the top and 11 in. by sliding bodily on the

*Abstracted from a paper presented before the Western Society of Engineers, Chicago, on March 30.

foundation. Pier 5 had a crack 2 in. wide for its full length from three to five courses deep, while the deepest part of the river was 57½ ft. below base of rail, as compared with 44 ft. in 1899.

### Apply for Authority to Rebuild Piers

As the White river is a navigable stream, application was made to the government on September 13, 1921, to rebuild Piers 4 and 5. This was granted on October 5, 1921. A contract for this work was awarded on November 1, and the floating plant arrived December 12. The stage of the river at this time was too high to permit the driving of falsework for supporting the spans during the construction of the piers, so all the contractor did in 1921 was to build platforms at the west end of the bridge for storing material and equipment above high water and erect a concrete plant. By January 7, 1922, the water had fallen sufficiently to permit the driving of falsework. This consisted of two bents of 18 piles each, driven on both sides of each pier and so located as to make a clear span of 32 ft. to permit the removal of the old pier and the construction of cofferdams for the new work. Carrying girders, built up out of three second-hand deck spans, were designed especially for this purpose. On these girders a grillage of 15-in. 42-lb. I-beams was placed with a cushion of 4-in. by 12-in. oak blocks between the girders and the grillage, the bridge shoes rested directly on the grillage.

In placing the girders and grillages, the first move was to cut away as much of the stone masonry between and outside of the shoes, to a depth sufficient to clear the bottoms of the carrying girders, as was considered safe. The girders and grillage were then loaded on a barge and floated to the pier, where they were placed on the falsework, and as close to the remaining masonry as possible. Heavy 12-in. by 12-in. timbers were lashed to the inclined end posts with steel cable and the spans lifted with jacks working under these timbers. The remaining stone was taken out, the girders moved transversely to position, and the jacks lowered. By making preparation in this manner, it was found that the load could be transferred to the falsework in a minimum of time and effort.

### Removing the Old Piers

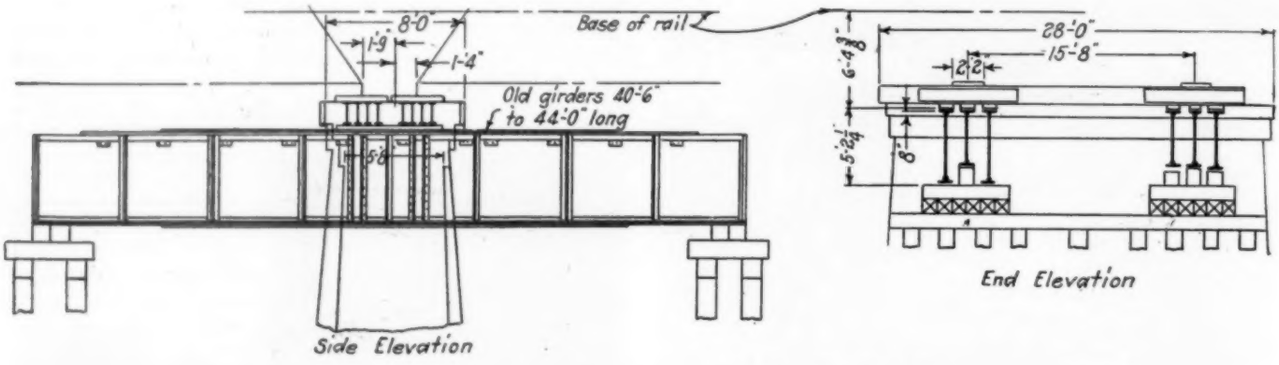
After the girders were in place the remainder of the pier was removed to the water line. Presumably the masonry was set in a lime mortar, but it was found to be exceptionally hard and tenacious, and fully as good as portland cement mortar. When the water line was reached, the remaining portion of the pier was drilled to the bottom with eight 1¾-in. holes and blasted. A dredge with an orange-peel bucket was then put in and the material taken out to the footing. It was found that when the bridge was originally constructed, white oak timbers 14 in. by 14 in. and from 20 ft. to 26 ft. in length, very carefully hewn and given a flat point, apparently to a template, had been driven in the form of a cofferdam, and tied together with 1¼-in. rods and two lines of waling, one inside and one outside. This enclosure was then filled to the top of the timbers with spalls and finer stone and the pier built up on this as a platform, but without extended footings.

The cause of the failure of the pier was also disclosed. It was apparent that these timbers were driven during a low stage of the river, and had at that time been substantially at the water's surface. During the fifty years since, occasional periods of low water, sufficient to expose the timbers, had occurred, and eventually enough decay had taken place to permit the crushing of the waling pieces and the consequent spreading of the old cofferdam.

An effort was made to pull them with the orange-peel bucket, but this was not successful. Finally tongs were fashioned out of two 30-ft. 85-lb. rails, and they were removed more easily and rapidly.

The removal of rip rap and the excavation of sand preparatory to placing the cofferdam was started, but the river was rising and work was closed down until the early part of April. The water reached a level only 9 ft. below base of rail. Operations were resumed again on June 1, 1922, and on June 8, the cofferdam was started. Six wooden pilings were driven outside of the cofferdam to support an outer line of waling which served later to keep the steel sheeting plumb. When these were in place the inner timbers for supporting the cofferdam were placed. On Pier 5, five horizontal rows of waling were framed the exact size of cofferdam or two feet larger than the neat foundation plans, and spaced 4 ft. apart; after all were in place U. S. steel sheeting of 35-lb. section 45 ft. long was put in place and driven. Under the girders, the clearance was such that shorter lengths were used and spliced together with 7-in. 16¼-lb. channels and ⅞-in. bolts. The sheeting was driven with a 2,800-lb. drop hammer, after which the remainder of the excavation was removed with an orange-peel dredge. The excavation was carried to about three feet below plan depth to allow for swell in driving foundation piles.

On June 27, piles of gum or oak, 40 to 50 ft. long were driven with a No. 1 Vulcan steam hammer below the surface of the water, giving an average penetration of 15 ft. This work was finished July 11.

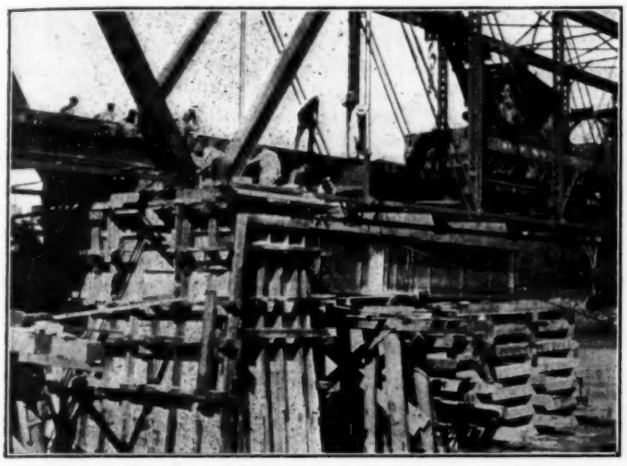



**How the Truss Spans Were Supported on Falsework While the Piers Were Being Rebuilt**

### Placing the Concrete

As the material in the foundation was a fine sand, no attempt was made to pump the cofferdam until a 6½-ft.

sealing course of concrete was placed. The concrete for the work was mixed at a plant erected at the west end of the bridge. The mixer was elevated so as to discharge directly into one-yard bottom-dump cars operated on the guard rail of the bridge. The aggregates were fed to the mixer with a guy derrick. The cars transporting the concrete were removed from the track with the derrick to permit the passing of trains. The concrete from cars was dumped in a hopper attached to the bridge, and deposited through a tremie made of 8-in. wrought iron pipe with a small hopper at the top. The tremie was supported from the boom of the derrick barge, and the concrete run from



**Removing Girders After the Completion of Pier 3**

the main hopper under the bridge to the tremie through wooden chutes.

The sealing was completed July 20 and allowed to set five days. Three 8-in. centrifugal pumps were installed to pump out the cofferdam. With only a single row of steel sheeting for the cofferdam and a head of 25 ft. of water, considerable leakage through the steel was anticipated, so a carload of front end locomotive cinders was provided to use in stopping the leaks. This was done by pouring them from burlap sacks on the outside after the pumps were started. This method was so successful that after the cofferdam was once pumped out, one 8-in. pump would handle the water. There were no leaks through the bottom.

After the water was out the foundation piles were cut off directly above the seal and a two-foot course of concrete placed over the entire footing, on top of which the main body of the pier was built. This work was completed August 10. On September 8 the girders were removed from Pier 5 to Pier 4. Previously truss spans on Pier 5 had been raised and permanent I-beam grillage placed under shoes across the opening for the girders. The openings were then filled with concrete and the coping of the pier completed. New end braces and pedestals to support stringers were placed and Pier 5 was completed Septehmer 25.

The operations at Pier 4 were similar to those at Pier 5. The driving of falsework started August 18, supporting girders from Pier 5 were set September 8, the old pier was removed between September 13 and 27, the driving of sheeting was started on October 3, excavation completed on October 21, foundation piles were driven between October 22 and 28 and sealing completed November 5. About 9 ft. of sealing was placed in this pier on account of the foundations being deeper. Foundation piles were cut off on November 11, and the pier finished December 1, 1922.

### Steamers Damage Pier 3

When Piers 4 and 5 were completed it was thought that all immediate danger was eliminated. However, the cross currents caused by the erosion of the east bank, both above and below the bridge, made it hazardous for steam boats to pass through the draw, which has a clearance of 91 ft. between the pivot pier and Pier 3. The river men were entering continuous complaints. On March 22, 1923, a steamer with tow hit Pier No. 3 and pushed four north courses of masonry out of place; a few days afterward a towboat with tow going in the opposite direction hit the pier pushing the stones nearly back in place. On July 6 the pier was showing signs of failure; it had settled 3 in. and moved south 4¼ in. On July 15, it had settled 4 in. more and it was decided to place the spans over it on falsework at once, using the falsework girders from Piers 4 and 5. In the meantime plans for the complete rebuilding of the bridge were made. At a meeting with the United States engineers in Memphis, plans were approved for the removal of the draw span and pivot pier and their replacement by a lift span 187 ft. in length giving a 175-ft. clear channel. Piers 2 and 3 were consequently designed to carry one end of the new lift span and an adjacent new fixed 150-ft. span.

### Work on Pier 3

The falsework for Pier 3 was completed in September and the removal of the old pier was started on October

**Placing the Girders on the Falsework to Support the Spans Clear of the Pier**

12. On November 24 the cofferdam timbers were placed. The bottom footing of this pier was 14 ft. deeper than for Pier 5, so seven horizontal rows of waling were placed with cross braces of 12-in. by 12-in. timbers spaced 8 ft. centers. The bottom of the footing was 66.7 ft. below base of rail, while excavation was carried to a depth of 69 ft. to allow for swell in driving the piles. The cofferdam being 30 ft. by 52 ft., 50-ft. spliced steel sheeting was used in this pier. All excavation and cofferdam work were completed December 12. A rise in the river at this time stopped further work until January 30, 1924. An attempt was made to work during the forepart of February, but another rise in the river caused almost complete cessation until July 29. The water was still too high to drive the 40-ft. to 50-ft. foundation piles on hand so 15-ft. to 20-ft. piles were spliced to them by means of 3-in. by 12-in. scabs, spiked with 8-in. spikes, making 60-ft. to 65-ft. piles. A total of 214 piles were driven with 12½-ft. penetration, by a No. 1 Vulcan steam hammer with 0.17-

in. penetration on last blow. The sealing was completed September 3, 12.5 ft. of concrete being placed by the same method as was used on Piers 4 and 5.

Pumps were started on September 8 and additional bracing placed as the water was lowered. Pumping was completed on September 10, piling cut off on September 11, 2 ft. 6 in. of concrete poured September 12, the main body of the pier completed September 29, falsework girders were removed October 28, and the grillage and cap placed on October 29.

Pier 2 is for the new bridge in a new location; consequently it was built without falsework. For years the east bank had been covered with heavy stone to protect it from scour of the river. This had to be removed before steel sheeting the coffer dam could be driven. It was feared that removal of material so close to old Pier 1 would endanger this pier so cofferdam timbers were placed on October 12 and the first row of sheeting driven by October 20. Excavation was then carried on inside the cofferdam by means of an orange-peel dredge.

### Serious Movement of Pier 1

On November 5 cracks appeared behind Pier 1 and observations showed it was moving forward at the rate of almost an inch a day, also settling ¼ to ½ in. This pier was watched carefully every day, and continued to carry the draw span until its replacement by falsework in February, 1925, when it had moved 20 in. and settled 9 in. The movement of the east pier was followed by a sliding of the bank until it gradually forced the top part of cofferdam over about 4 ft. On account of this crowding, it was possible to place only five sets of waling before pumping, so it was decided to place more sealing concrete and not pump down so far. On December 3, at a time when the work was being rushed to overcome high water, the derrick boat sank in about twenty-five feet of water, which delayed the work until the boat was raised, repaired and ready for service on December 16. In the meantime a guy derrick was installed at the downstream end of the pier. After the derrick boat was again fit for service, excavation was resumed, completing the upstream end of the cofferdam by the night of December 16. Immediately afterwards foundation piles 65 ft. to 70 ft. long were driven to 20-ft. penetration with the aid of a jet pump in the upstream end, while excavation was still proceeding in the down-stream end. A rise in the river stopped further work from December 23 to January 3. Next day, however, pile driving was resumed during a cold wave and the last piles were driven on January 10. A sealing course 16 ft. thick was placed at once and finished on January 14. Concrete was allowed to set five days and pumped out to two feet below the last row of waling. Piles were cut off with a specially made saw 4 ft. below water. Then an additional 6 ft. of concrete was placed and the rest of the pier built on this foundation. Concrete work was finished on February 5. Shortly after, work was shut down until summer in expectation of spring rise.

On account of the gradual scour of the east bank, another new Pier 1 will be built 150 ft. to the east of Pier 2 and an additional 150-ft. truss span will supply increased waterway. Work on this pier will commence as soon as the stage of the water permits.

All materials used were furnished by the railway company, and all the equipment except track equipment was furnished by the contractor. The Bates & Rogers Construction Company, Chicago, was the contractor. The work was done under the general direction of C. A. Morse, chief engineer, and I. L. Simmons, bridge engineer. Bert Matheis and H. Bober were engineers in charge.

# Freight Car Loading Declines

WASHINGTON, D. C.

REVENUE freight car loading seems to have started on the same kind of a slump which was experienced during March last year, largely because of the falling off of coal traffic, although miscellaneous freight continues to show increases. For the week ended March 21 the total loading was 909,363 cars, an increase of 973 cars as compared with the corresponding week of last year but a decrease of 7,455 cars as compared with 1923, when the weekly loading figures were showing an upward trend. The total for the year to date, however, is still above that for previous years. Reductions as compared with the corresponding week of last year were reported from the Eastern Allegheny and Northwestern districts, and also in the loading of grain and produce, livestock, coal, coke and forest products. Coal loading was 21,743 cars less than that for last year and 45,568 cars less than that for 1923. On the other hand miscellaneous freight showed an increase of 23,640 cars as compared with last year and an increase of 17,860 cars as compared with 1923. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

REVENUE FREIGHT CAR LOADING
Week Ended Saturday, March 21, 1925

| Districts | 1925 | 1924 | 1923 |
|---|---|---|---|
| Eastern | 216,262 | 225,207 | 236,633 |
| Allegheny | 188,436 | 191,179 | 204,545 |
| Pocahontas | 39,219 | 38,402 | 34,625 |
| Southern | 153,568 | 145,785 | 144,739 |
| Northwestern | 115,421 | 118,413 | 107,403 |
| Central Western | 131,895 | 129,671 | 134,269 |
| Southwestern | 64,562 | 59,733 | 54,604 |
| Total Western | 311,878 | 307,817 | 296,276 |
| Commodities | | | |
| Grain and grain products | 34,029 | 37,792 | 39,352 |
| Live stock | 28,924 | 31,072 | 29,720 |
| Coal | 139,363 | 161,106 | 184,931 |
| Coke | 12,062 | 13,312 | 14,839 |
| Forest products | 79,170 | 81,660 | 73,201 |
| Ore | 12,150 | 11,180 | 14,684 |
| Mdse. l. c. l. | 258,367 | 250,610 | 232,653 |
| Miscellaneous | 345,298 | 321,658 | 327,438 |
| Total | 909,363 | 908,390 | 916,818 |
| March 14 | 924,149 | 916,762 | 904,116 |
| March 7 | 930,009 | 929,381 | 905,344 |
| February 28 | 862,910 | 944,514 | 918,624 |
| February 21 | 925,295 | 845,699 | 830,187 |
| Cumulative total, twelve weeks | 10,833,840 | 10,680,622 | 10,380,466 |

The freight car surplus continues to increase and for the week ended March 22 averaged 320,565 cars, including 107,193 box cars and 168,963 coal cars. The Canadian roads had a surplus of 28,435 cars, including 24,450 box cars and 300 coal cars.

### Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended March 21 showed increases over the previous week in grain, live stock, coal, merchandise, miscellaneous freight, but decreases in all of the forest products, the total being heavier by 877 cars. Compared with the same week last year the decrease in total loading was 5,648 cars. Gains were made in merchandise and ore but all other commodities showed lighter loading.

| | Total for Canada | | | Cumulative totals to date | |
|---|---|---|---|---|---|
| | Mar. 21, | Mar. 14, | Mar. 22, | | |
| Commodities | 1925 | 1925 | 1924 | 1925 | 1924 |
| Grain and grain products | 6,943 | 6,432 | 7,465 | 77,436 | 98,010 |
| Live stock | 2,288 | 2,074 | 2,394 | 26,853 | 25,383 |
| Coal | 3,729 | 3,194 | 6,046 | 66,155 | 58,152 |
| Coke | 252 | 494 | 258 | 3,863 | 3,184 |
| Lumber | 3,033 | 3,239 | 4,112 | 33,903 | 38,343 |
| Pulpwood | 4,050 | 4,563 | 5,093 | 48,898 | 47,345 |
| Pulp and paper | 2,098 | 2,187 | 2,195 | 25,510 | 26,140 |
| Other forest products | 3,556 | 3,827 | 3,693 | 39,739 | 37,683 |
| Ore | 1,292 | 1,300 | 1,135 | 13,963 | 10,932 |
| Merchandise, l. c. l. | 15,128 | 14,779 | 14,578 | 165,150 | 149,858 |
| Miscellaneous | 11,482 | 10,885 | 12,530 | 117,696 | 123,347 |
| Total cars loaded | 53,851 | 52,974 | 59,499 | 619,166 | 618,377 |
| Total cars received from connections | 33,665 | 35,926 | 38,598 | 398,728 | 417,036 |

# Delaware & Hudson Asks Injunction on Automatic Train Control

*Argues that Congress granted too much power, and Commission was careless—Views of Messrs. Harahan, Elliott and Rudd*

THE Delaware & Hudson Company, prosecuting its suit for an injunction against the order of the Interstate Commerce Commission requiring the installation of automatic train control, presented before the United States District Court at New York City, on March 27, an elaborate argument citing scores of court decisions, supplemented by affidavits from a half dozen railroad officers and others, to support its assertion that the action of the government is unconstitutional, that no contact device is suitable for use in cold climates and that the induction types are still too undeveloped to warrant their introduction on the Delaware & Hudson lines. An installation would be experimental and would introduce dangers; and would be an unwarranted expenditure of the company's money.

The attorneys for the road were Walter C. Noyes and H. T. Newcomb. They set forth (1) that section 26 of the Interstate Commerce Act delegates legislative power and discretion, because it does not establish any standards for the guidance of the commission in ordering the installation of safety appliances; (2) that even if not thus unconstitutional the order of the commission to the 49 roads to install automatic train control made no special findings as to the Delaware & Hudson, or as to any other railway, but made its selection of roads arbitrarily; (3) for a road in a cold climate, there is not yet any device that meets the commission's conditions; (4) the commission mistakenly regarded the act of congress as a command to compel installations irrespective of the undeveloped state of the art; and (5) that the order of July 18, 1924, allowing the use of the forestalling device was practically a new order, which would allow two years' additional time for compliance.

Outlining the facts, the brief of the counsel shows inconsistency as between different provisions of the commission's orders of 1922 and 1924 and alleges that various clauses embrace contradictory conclusions as to details of what should be required.

That section 26 is unconstitutional, is argued from various court decisions, it contains no standards whatever; it authorizes the giving of orders to "any carrier," but does not indicate how the carrier is to be selected; it includes "other safety devices," but indicates no preference in favor of any one, leaving the commission to explore in unlimited fields with no intimation of the bases of choice intended by congress. Congress might have established a general legislative rule, but did not do so; it attempted to delegate the whole legislative power and discretion, which is a thing no legislature is permitted to accomplish.

The facts cited in the commission's orders afforded no foundation for the commission's findings and, therefore, the order based on the findings should not be carried out. The commission ought not only to have standards, but ought to set forth, in its order, how and to what extent they had been used in reaching conclusions. There had been no investigation as to the practicability or desirability of any kind of automatic train stop or train control on the Delaware & Hudson. The commission said that it had selected the roads with regard to the measure of the risk of accidents; but so far as the Delaware & Hudson is concerned, the selection of the portion of the road to be fitted with the apparatus, was wholly arbitrary; no inquiry was made.

The first report of the commission (1922) was predicated mainly on the fact that installations of ramp type automatic stops had been more or less successfully used; yet the order went on to require automatic train control (speed control), which had only been developed in connection with induction systems; and these, unlike the ramp system, had not been developed. Since the issuance of the commission's order, no railroad has introduced or extended the use of the ramp type. The officers of the Chesapeake & Ohio say that the ramp type in use on that road is unsatisfactory and will not be extended.

Congress never intended to require expenditures for railway capital for experimental purposes, and such a requirement would be unconstitutional. Experimental installation on the grandiose scale required by the commission, would probably decrease safety, creating new and little understood dangers. The commission having misconceived the law, its order is invalid. The commission admitted in its reports that the art of automatic train control needed further development.

### Views of Prominent Railroad Officers

Affidavits supporting the company's arguments were presented from W. J. Harahan, president of the Chesapeake & Ohio; B. T. Anderson, superintendent of signals of the same road; W. H. Elliott, signal engineer of the New York Central; A. H. Rudd, chief signal engineer of the Pennsylvania, and W. W. Salmon, president of the General Railway Signal Company; also from Warren S. Stone, chief of the Brotherhood of Locomotive Engineers and from several officers of the Delaware & Hudson.

Mr. Harahan spoke from a railroad experience of 40 years. He testified that his road had begun with the ramp type in 1916 and had spent $400,000 on 61 miles of line; but if other sections were to be equipped a radically different type would be chosen. Failures were six times as frequent as in the automatic block signals; there were four false-clear indications while there were no false-clear indications by the long-tested visual signals. In 17 instances, the breakage of a shoe or something of the kind caused serious hazard of derailment. The ramp system is not only unsuitable; it is not capable of development. There is no device of any type which has been used with success and fully developed. The affiant and "all men of experience" believe that the continuous-inductive type is the only one by which the order of the commission can be complied with. It is still desirable to experiment with many different devices. Not only must the railroads have efficient devices, there must be standardization so that locomotives can be run over other railroads. Interchangeability is an important feature in which, as yet, very slight if any progress has been made.

Automatic train stops are very costly and the capital of American railways is limited; what money they have could be better spent for the extension of block signals and the elimination of grade-crossings.

Mr. Anderson (18 years' experience) supported Mr Harahan's statements and gave details of the unsatisfactory operation of the ramp system on the C. & O. In nine years the apparatus was subjected to 13 different changes. Numerous false-clear indications occurred from causes that could not be discovered. About a year ago the apparatus was out of service for two or three weeks because of the destruction of wires by a sleet storm. Such a storm would have the same effect with any other type of train control.

Mr. Elliott (32 years' experience) testified that the ramp type had been decided to be unsuitable for use on the New York Central and would be unsuitable on the Delaware & Hudson. The automatic block signals now in use will give a false-clear indication, say, once in two million operations, but with automatic train control this proportion thus far has been one to 500 or 800; therefore, until there has been further development the extensive use of automatic train control is not a source of additional safety but might be a source of additional danger.

Mr. Rudd has had 37 years' experience in signal engineering and has studied automatic stops since 1910. He recounted the experiences of the Pennsylvania in its efforts to comply with the commission's order. Prior to the modification of this order which allowed the use of a forestalling arrangement, he had recommended the development of the continuous inductive type. Believing the ramp type objectionable unless the forestalling device could be used, he deemed the continuous inductive type absolutely necessary, and began experiments upon it without delay, installing this type on the Lewistown branch. He believed and now believes that this decision was wisely based, and that the apparatus determined upon offers the best apparent prospect of successful development.

When the commission modified its order and yet would not approve what the Pennsylvania had done, he recommended his company to consider apparatus of the continuous-inductive stop type with the device under control of the engineman. He does not approve, for use on the Pennsylvania, a train stop without speed control, but he has recommended its consideration as probably meeting the intent of the changes made by the commission on July 18, 1924. "In view of this change it seemed desirable, pending the final development of the continuous-inductive type of automatic control devices, and for reasons connected with efficiency and safety in operation to adopt said continuous-inductive stop type. The recommendation of this type of train stop necessitates, however, a new line of development which has not been concluded, and the affiant believes a longer period of time should be allowed in which to formulate new plans and procure material necessary for the safe and proper installation of such a device upon an entire passenger locomotive division."

Mr. Salmon (civil engineer engaged in signaling 30 or 40 years) said that he was satisfied that no ramp type would be satisfactory on the Delaware & Hudson, and that the intermittent-induction type with the permissive feature is the best for that road. His company co-operated with the Delaware & Hudson in making experiments carried out on that road on a length of three miles near Albany, continuing the work which was begun by the Federal Railway Signal Company. He agreed with the officers of the road that satisfactory experiments could not be made between July 18, 1924, and January 1, 1925.

A. H. Rice, signal engineer, and H. F. Burch, assistant general manager, testified as to detail conditions on the Delaware & Hudson.

Mr. Stone, who began as a fireman on the Rock Island in 1879 and who was a locomotive runner for 19 years, said that he was opposed to the use of automatic train stops or automatic train control, believing either to be undesirable and unsafe; he had talked with many enginemen now in service and found that their views agreed with his own. The enginemen generally believe that it is undesirable and unsafe to divide control of the trains between the engineers and automatic apparatus largely outside the trains, which may or may not operate accurately in practice; and for the reason that the proper handling of the trains by the brakes, in emergencies and at other times, requires the exercise of personal judgment and discretion and must be adapted to the conditions of the particular time and place.

No two trains brake alike. There may be half a dozen different weather conditions affecting the operation of the brakes on the same trip. Affiant would not be willing to act as engineer of a fast modern locomotive drawing a passenger train and divide his responsibility for braking with any automatic device that has yet been developed. He would consider such intervention an additional source of danger.

The chances of an automatic train stop being made necessary by the engineer becoming paralyzed or dying, are about one in 10,000,000, while automatic train stops, in the present state of the art, will probably fail once in every 2,000 or 3,000 operations. "The greatest tragedy of the railroads has not yet been written"; it will be written some foggy night when an engineman who is willing to take chances depends upon the automatic control, and that control fails.

L. F. Loree, president, testified that he had been president of the Delaware & Hudson since 1907, and also is interested in the management of various other roads; has been active in railroad management since 1881, and has studied automatic train control for more than 20 years; he has not omitted or neglected to investigate all hopeful propositions, and is of the opinion that there is no device of merit that he has not adequately investigated. Reviewing and summarizing the conditions and obstacles on the Delaware & Hudson, as set forth in court by his attorneys and engineers, and observing that the continuous-inductive type would cost many hundreds of thousands of dollars more than the intermittent-induction type, he concluded that the installation and use of any of these devices at present would seriously interfere with the safe and expeditious operation of trains. In the present state of development the installation of any type of these devices would be premature, and would result in increased danger to passengers and employees. The large capital that would be required would not be expended in the interest of public safety, but would be very largely consumed in unavoidable experiment work, with great probability that much costly material would have to be thrown away. The money that would have to be used would in much larger measure advance the safety of passengers and employees if devoted to the purchase and installation of safety devices of fully established merit, or to the elimination of dangerous grade-crossings.

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THE TREASURY DEPARTMENT has announced the arrest of two former employees of the Bureau of Internal Revenue charged with an attempt to defraud the New York, New Haven & Hartford of a large sum of money by representing to officers of that company that the government was about to assess taxes of over a million dollars against subsidiary companies and that for a percentage they could have the tax reduced or eliminated. Officers of the company immediately reported the matter to the bureau and the arrests followed.

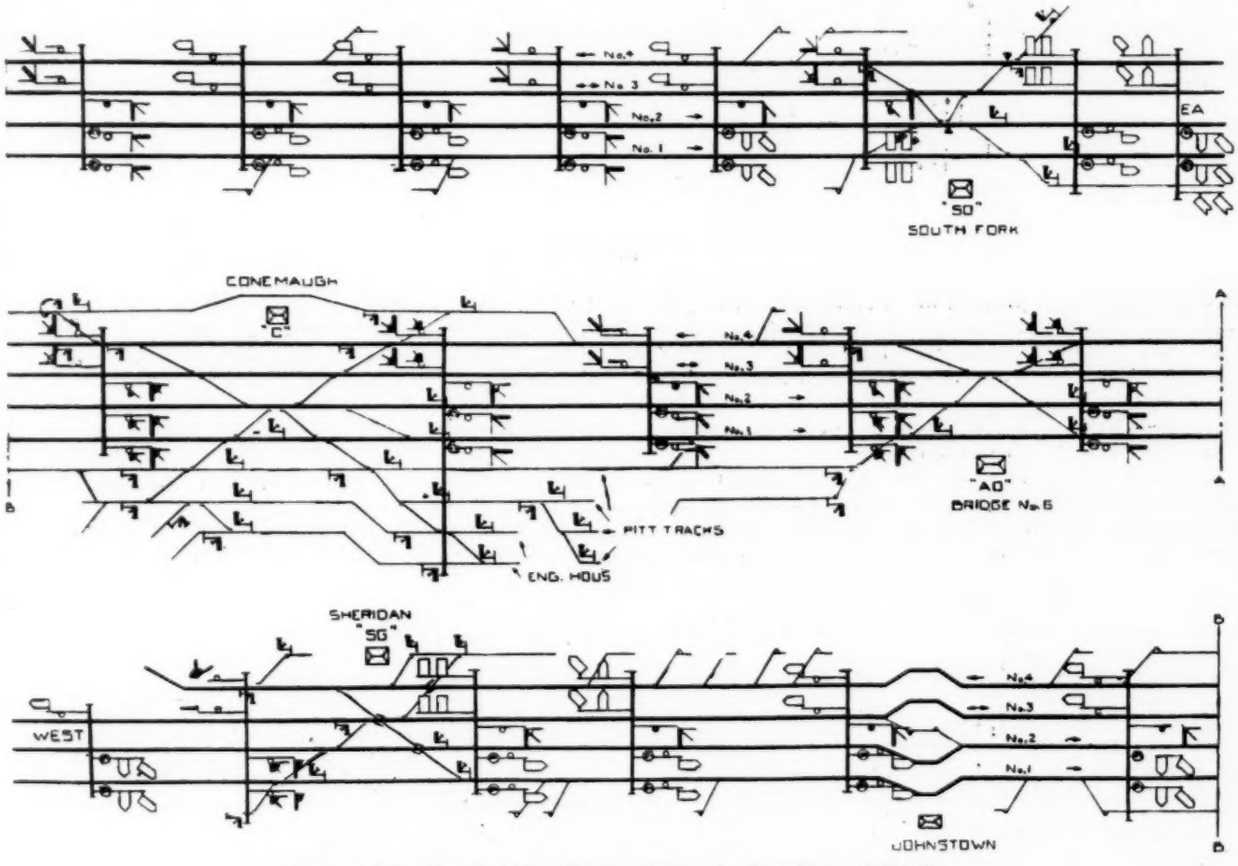
# Relieving Congestion by Signals on the Pennsylvania*

*Installation of controlled manual block signaling postpones double tracking*

By W. M. Post
Superintendent of Signals and Telegraph, Central Region

GENERALLY it has not been considered good practice to operate trains on single track, or against traffic, by signal indication only, unless controlled by track circuit and traffic locking. A system of continuous track circuit and traffic locking was developed by C. C. Anthony of the Pennsylvania, and was first installed on the Renovo division between Huntley, Pa., and Cameron, on January 7, 1907. The original installation consisted of a single track railroad 8.6 miles in length with three interlocking block stations; one located on the east end at Huntley *HY* where the single track led into a double track road with a middle passing siding extending eastward from *HY* and passing siding extending westward from *HY* paralleling the single track.

A second plant was located at Sterling Run *SG* with passing sidings to hold 85 cars east of the interlocking station, and 85 cars west of the interlocking station. A third plant was located at the west end at Cameron *FR* where the single track led into a double track road with a passing siding extending eastward paralleling the single track. During 1917 the single track line between Cameron *FR* and Sterling Run *SG*, 3.5 miles, was double tracked by extending the passing siding at *FR* eastward and connecting it to the west end of the passing siding extending eastward from *SG*, and on October 12, 1917, the controlled manual block system was extended to cover the new westward and eastward tracks in both directions.




**Plan of Signaling for Run Around Move Against Normal Traffic**

### How the Controlled Manual System Operates

The controlled manual system is absolute for opposing movements, and permissive for following movements. Continuous d. c. track circuits are provided, and each interlocking is equipped with approach locking with clockwork time releases. At each interlocking block station

*A paper read before the Signal Section, American Railway Association, at Chicago, March 13. Other papers were reported in the *Railway Age* of March 21 and 28.

there is a block instrument controlling each block. This instrument consists of two electrically locked semaphore indicators and circuit controllers, each having its own miniature lever standing normally in the vertical position, which can be moved to the right or left. One lever is used to control the block between its block station and the one at the other end of the block, and is known as the block lever. The other lever is used for the control of the signals and is known as the signal lever. The indicator on the block instrument over the block lever, known as the block indicator, shows whether or not the block lever is unlocked from the next block station, and whether the track is clear from any switch controlled by this block station to the next block station.

An indicator is provided, known as the *C* indicator, which shows whether or not the track is clear for a distance of about 1,000 ft. (later practice 300 ft.) beyond the block signal. A proceed block signal cannot be given when this indicator is not clear. An indicator, known as the *D* indicator, is provided, which shows whether the track is blocked between the block signal and a point several hundred feet beyond any switch controlled from the block station. This indicator is not necessary where there is no such switch in the block.

A switch indicator is located at each switch in the block, and is cleared to permit a train to leave the siding by movement of the signal lever to the left, and is cleared for a train to enter the siding from the main track by the movement of an auxiliary circuit controller lever in the block station, provided the short releasing track circuit ahead of the switch is occupied by a train.

When a train is approaching *HY* moving toward *SG*, *SG* will move his block lever for that block to the left. If the block is clear, this will clear the block indicator at *HY*. *HY* will then move his block lever to the right which will release mechanically the signal lever in the block instrument. This signal lever can then be moved to the right thereby releasing the signal lever in the interlocking machine and permitting the block signal to be cleared. The movement of the signal lever in the block instrument to the right locks its block lever and prevents *SG* from obtaining the block, or displaying a signal for the block. The train as it enters the block will return the signal to the stop position, and cause the *C* and *D* indicators to show that a train is in the block. Following movements under permissive signal may then be made provided the preceding train has passed far enough beyond the block signal to allow the *C* indicator to clear.

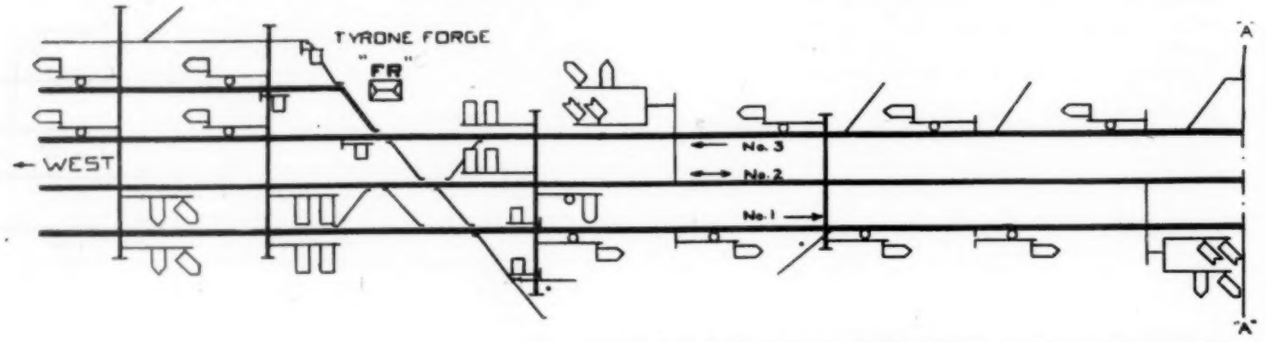
If a train on the siding controlled by *HY* is to enter the main track at switch *A* following a train admitted at *HY* on the main track, *HY* will move his signal lever in the block instrument to the left to clear the switch indicator and unlock the switch. This can be done only when *HY* has the block, the *D* indicator is clear, and the block signal is in the stop position. Moving this signal lever to the left locks the block lever and prevents *SG* from obtaining the block or displaying a signal for the block. After the train has passed far enough beyond the switch to allow the *D* indicator to clear, *HY* can, if necessary, move his signal lever to the right to give a permissive signal for a following train.

If it should be necessary to let a train leave the siding and return toward *HY*, this can be done as described in preceding paragraph, but while such train is moving from switch *A* to *HY*, no other train can be admitted to the block at either *HY* or *SG*.

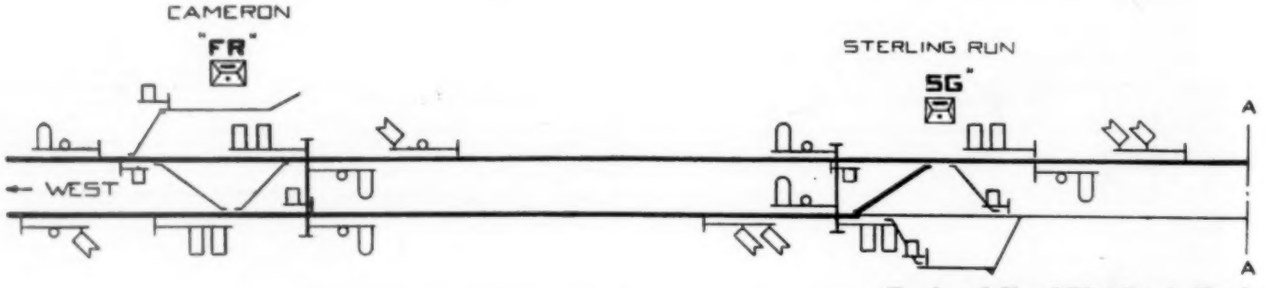
If a train is to enter the main track at switch *A*, and move toward *SG* after a train moving from *SG* has passed switch *A*, *HY* will proceed in the same way as he would to admit a train at his own signal, except that when *HY* block instrument has been unlocked by *SG*, *HY* will move his signal lever to the left to clear the switch indicator and unlock the switch.

In the same way a train may leave the siding and return to *HY* after a train moving from *SG* has passed switch *A*. No train can be admitted to the block at *SG* under these conditions until the train let out of the siding has cleared the block at *HY*.

If it is necessary for a train moving from *SG* toward *HY* to enter siding at switch *A*, *HY*, by moving his




**Track and Signal Plan Spruce Creek to Tyrone Forge with the**




**Track and Signal Plan Track Circuit**

auxiliary circuit controller lever to the left, will clear the switch indicator and unlock the switch when the train occupies the short track circuit ahead of the switch. After *HY* has unlocked switch *A* for this movement, *SG* can only display signal for permissive movement, and *HY* cannot obtain the block for movements from *HY* to *SG* until switch is again locked in the normal position, block is clear, and auxiliary circuit controller lever is restored to the normal position.

### Territory and Traffic Handled

This controlled manual block system covers the "neck of a bottle" between the Driftwood, Pa., freight yard and the junction of the low grade branch of the Allegheny division on the east, and the Emporium Junction, Pa., freight yard and the junction of the main line of the Buffalo division on the west. During the month of October, 1924, there were handled through this controlled manual block territory eastward, 247 regular passenger trains, 22 extra passenger trains, 325 freight trains; westward, 249 regular passenger trains, 21 extra passenger trains, and 310 freight trains, an average of 42 trains per day. During this period there were 36 movements against the traffic made between *FR* and *SG*, the double track portion, by signal indication and without train orders.

During the depression of 1923, at which time a number of block stations in manual block territory were closed, it was suggested that possibly some saving could be effected by closing one of the three interlocking plants in the controlled manual block territory. It was found that if Cameron *FR*, the least important plant, were closed, it would increase the cost of operation in this territory by $87 per day, so, of course, the interlocking was not closed.

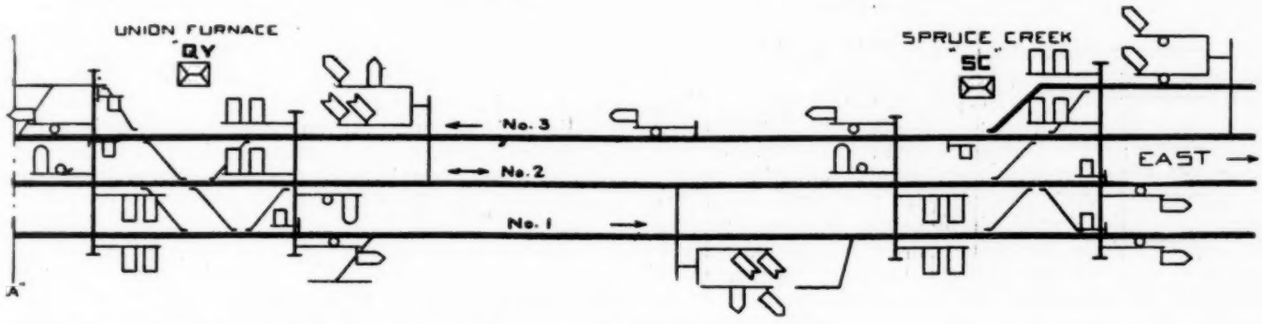
The need for a double track was urgent in 1907. The installation of a controlled manual block system postponed the necessity of double track on 3.5 miles until 1917 (ten years), and the second track has not yet been installed over the remaining 5.1 miles.

Since the installation between Huntley, Pa., and Cameron, Pa., there have been 45 similar installations, a few of which in terminal territory are not controlled by track circuit. Most of these installations are over short stretches of track where it is necessary to move trains in both directions frequently. It is difficult to determine the money saving, due to facilitating traffic, but there is no doubt it is considerable in each case. The description of the installation between Huntley and Cameron, together with descriptions of the installations between South Fork and Sheridan on the Pittsburgh division, and between Spruce Creek and Tyrone Forge on the Middle division, which follow, will be quite typical of all.

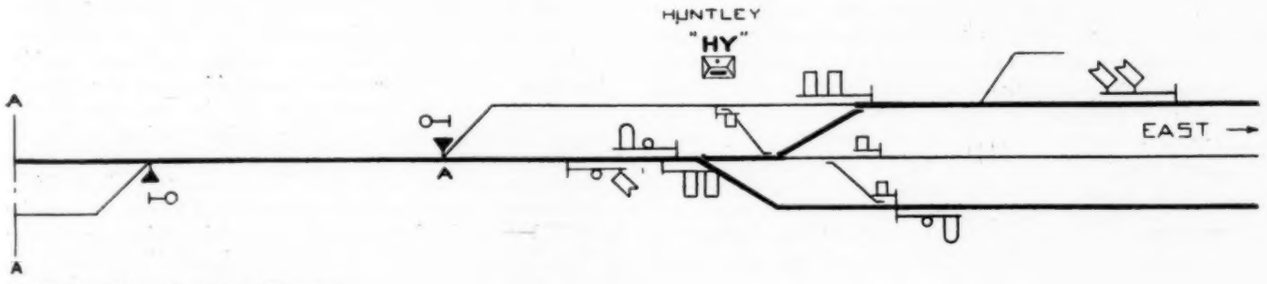
### South Ford *SO* to Sheridan *SG*

The installation from South Fork *SO* to Sheridan *SG*, 11.2 miles on the Pittsburgh division, is on the westward passenger track of a four-track system. All eastward freight trains stop at Conemaugh, the foot of a 24-mile grade up the Allegheny mountains, to take helping engines and have fires cleaned. Whenever freight trains cannot be taken care of on the pit tracks, the trains are moved to the ash pits on No. 1 and 2 main tracks, making it necessary to move passenger trains east on the westward passenger track. Previous to the installation of the eastward signals on the westward passenger track in 1916, it was necessary to issue train orders which resulted in delay to passenger trains. Whenever tonnage freight trains arrive faster than they can be taken care of on the pit tracks and No. 1 main track, it results in trains lying out on No. 1 eastward freight track west of *C* Conemaugh. Under such conditions the preference freight trains are run on No. 2 eastward passenger track at *SG* Sheridan, and around the tonnage trains on No. 1 track, and passenger trains are run east on No. 3 westward passenger track from *SG* Sheridan to *AO*, and often to *SO* South Fork. Automatic signals are provided for following movements both with and against the traffic on No. 3 westward passenger track.

At the present time trains move with little delay through




**Middle Track Signaled for Movements in Both Directions Without Orders**




**Traffic Locking Cameron-Huntley**

this territory, and there is an average of only six eastward passenger trains per day using No. 3 westward track. During periods of freight congestion there have been as high as 20 passenger trains per day run against the traffic, and 18 preference trains per day run on No. 2 eastward passenger track around slow freights.

### Delays Eliminated Between Spruce Creek and Tyrone Forge

The main line of the Pennsylvania between Harrisburg and Altoona, known as the Middle division, is four track, with the exception of the territory between Spruce Creek and Tyrone Forge, a distance of 6.8 miles, where the road winds in and out around the base of the hills, following the course of the Juniata river, which it crosses 17 times between these two points over stone arch bridges. Here the railroad is limited to three tracks, on account of the expense which would have been involved in the construction of larger bridges, and in the making of deeper cuts and fills.

The three-track territory originally consisted of: No. 1 eastward passenger and freight track; No. 2 westward freight track; No. 3 westward passenger track. There were four block stations: *FR*—Tyrone Forge; *UE*—Birmingham; *QY*—Union Furnace; *SC*—Spruce Creek.

Prior to 1913, trains were moved over the division under manual block control, with the permissive signal for freight movements. Traffic at that time had increased to a point where the delay caused by this method of operation made some change necessary, which would speed up the movement and increase the capacity of the tracks. The delays in the three-track territory were even more serious. To remedy these conditions it was decided to install automatic signals with the current of traffic over the four-track portion of the main line, and in three-track territory it was decided to install automatic signals for movements with the current of traffic on No. 1 and 3 tracks, and to install controlled manual block with the permissive signals for freight movement on the middle track, so that this track could be used for the movement of trains in both directions without the issuance of train orders.

Prior to the change it is estimated that there was a delay to 75 per cent of the freight movement through the three-track section. A great deal of this delay applied to eastward freight movement at Tyrone Forge during periods when eastward passenger trains were moving at frequent intervals. The train dispatcher occasionally advanced freight trains by moving them against the current of traffic on No. 2 track, when conditions would permit. However, it required so much time in starting an eastward freight train by means of a train order, and in crossing them from the four-track to the three-track system, that freight trains were often held rather than chance the delay to passenger trains. This move was further complicated, due to eastward freight trains being obliged to cut at public crossings when held west of the three-track territory.

The installation of the signaling on the three-track territory was completed July 21, 1913. This installation not only eliminated most of the delay, but it is estimated that the capacity of the tracks was increased to such an extent that the three-track system would be able to take care of an increase of at least 23 per cent in traffic.

Occasionally some delay is still experienced with eastward freight during the period of the day when eastward passenger trains are frequent. Consideration is now being given to the installation of automatic signals for eastward movements on No. 2, the middle track, which it is felt will relieve this condition. The capacity of No. 2 track can be further increased by the installation of automatic signals for westward movements. With these two proposed improvements it is felt that a considerable increase in traffic can be handled in this territory before consideration will have to be given to the construction of the fourth track, which it is estimated would cost approximately $900,000.

The signals installed in this territory are top mast a.c. automatic signals and a.c. track circuits; top mast d.c. signals at interlockings, with a.c. track circuits, the alternating current being supplied from a 3300-volt underground power line.

There is an average of 78 passenger and 70 freight trains per day, many of the freight trains being 100-car trains. It is estimated that this installation, which included automatic signals on No. 1 and 3 tracks, also controlled manual block on No. 2 track, cost in 1913 approximately $60,000. The interest on this investment was almost wholly covered by the abandonment of *UE* block station at Birmingham, making any saving incident to the elimination of delay to 75 per cent of the freight movement in this territory a clear profit. It also saved the expenditure of approximately $900,000 for the construction of a fourth track.

It is probable that with an average increase in traffic, and the two improvements proposed for the future, consideration need not be given to the construction of the fourth track for 10 or possibly 20 years.

# Preliminary Reports on Train Control Installations

WASHINGTON, D. C.

THE Interstate Commerce Commission has made public copies of letters written by E. H. DeGroot, Jr., director of its Bureau of Signals and Train Control Devices, to officers of the Southern, the Illinois Central and the Chicago, Burlington & Quincy, offering criticisms and comments as the result of the preliminary inspections by the commission's engineers of the installations of automatic train control devices on these lines. The letter to H. W. Miller, vice-president of the Southern, covers the installation of the intermittent induction "automanual" train stop device of the General Railway Signal Company on the 35-mile double track section between Ludlow, Ky., and Williamstown, on the southwestern district of the Cincinnati, New Orleans & Texas Pacific. The letter to J. J. Pelley, vice-president of the Illinois Central, covers the installation of the two-speed continuous induction device of the Union Switch & Signal Company on the 22-mile section of the line between Champaign, Ill., and Tuscola. The letter to Hale Holden, president of the Chicago, Burlington & Quincy, covers the installation of the intermittent magnetic train stop device of the Sprague Safety Control & Signal Corporation on the 21 mile section between Creston, Ia., and Corning.

The letter to Mr. Miller makes the following points:

1. The track inductor as located and fastened makes displacement or removal unlikely, and it is therefore believed that the employment of detectors is not required on this installation.

2. As a clear operation of the device depends upon the inductor winding being closed, a cross in the wires leading to the inductor winding would result in a false clear condition of the inductor. It is, therefore, vital that the installation and maintenance of the track inductor circuit shall be such as to protect the integrity of this circuit.

3. The track inductor winding is closed for clear operation when the polarized track relay is picked up and the signal in the clear position. Should a signal fail in the clear position with a train in the block the stop inductor at the failing signal would constitute the only protection afforded a following train and the degree

of protection would vary with the location of the train occupying the block.

It is suggested that this be given careful consideration with a view of possibly securing increased protection.

4. The track inductors are located at the signals, and the stop operation for an occupied block is provided at the next signal in the rear of that at the entrance to such block. This requires an engineman to forestall at a caution signal in order to enter the caution block, and should this block be too long and an engineman not be alert while running therein the train could approach the stop signal at such speed as to overrun this signal. This observation is not directed at the blocks observed, but is offered on account of its basal importance. . . . .

5. Track inductors should be provided at braking distance from the signals governing entrance to train control territory.

6. It is suggested that the type of fouling protection employed at sidings and crossover switches be considered with a view of possibly securing increased protection.

7. It is suggested that the small actuator piston which operates the rotary valve to service position be checked to make sure that its area is sufficient to care for extreme rotary valve frictional resistance.

8. During the inspection the results which would follow certain possible crosses in the locomotive wiring were discussed, and since such crosses could result in false clear operations, it is obvious that the integrity of these circuits must be protected.

The Illinois Central letter says:

1. It is suggested that the cut-in feature at the beginning of train control territory in this installation be carefully considered with a view to possibly securing increased protection, for while the wayside and cab signals are intended to apprise the engineman of a failure of the device automatically to cut-in, this method involves reliance upon the human element.

2. It is understood that difficulty has been experienced as a result of the presence of foreign current at a location outside of equipped territory; this foreign current cutting into service the train control device after it has been electrically cut out.

Since foreign alternating current, if present in the track rails of equipped territory, might cause false clear failures of the train control device, it is, of course, essential, that effective means shall be provided to prevent this should such condition develop.

3. The sign indicating the beginning of train control territory at Tuscola is located at the southwest roadside signal of the installation. This results in no B point being provided for such signal, and it is, therefore, suggested that this sign be removed to the first signal north of its present location. At Champaign the general situation apparently is such as not to require any change.

4. It is suggested that the type of fouling protection employed at sidings and crossovers be considered with a view to possibly securing increased protection.

5. No provision has been made in this installation for having enginemen acknowledge at succeeding stop-signals.

6. The records of difficulty encountered in service with this installation disclose two matters which require attention: (1) pipes becoming clogged with scale and dirt; and (2) valves being rendered inoperative through freezing.

The first condition is explained as having resulted from failure properly to prepare and blow out the pipes with steam or air before they were applied, and it is understood that this will be guarded against in future.

While the second condition is reported as having developed in only a few cases on two of the locomotives, the freezing occurred at the pilot valve, at the application valve, at the brake pipe equalizing discharge valve, and at the magnet valve—and any one of these valves would, if frozen in normal position, constitute a potential source of serious failure. Effective means will have to be applied for preventing an accumulation of moisture in these valves sufficient to effect the sealing closed of their ports through freezing, and we have been assured both by your representatives and those of the train control company that this will be done.

The Burlington letter contains the following:

1. It is our understanding that an arrangement for checking the displacement or removal of a track magnet, similar to that provided at the distant signal for eastward home signal S-394.4, will be installed for each main track magnet.

The specifications and requirements are as follows: Paragraph 3, Design and Construction. "The apparatus shall be so constructed that it will, so far as possible, perform its intended function if an essential part fails or is removed. . . . ."

2. It is our understanding that the track magnets at signals N-407.7 and S-406.0 are to be removed and installed at the exit ends of their respective sidings, and that track magnets will be installed at all other locations where protection should be afforded in connection with movements onto main tracks.

3. Where not so located, the ground reset switches should be installed where they cannot be operated while locomotives are moving.

4. It is suggested that the interval between stop-indication points and home signals be given careful consideration with a view to making sure that safe braking distance is provided for trains at high speed. This is especially important in the absence of overlap.

5. Cut-out cocks should be sealed.

6. If the oil reservoir is to be maintained separately from the brake-valve head, as now installed, it is essential that the integrity of the connecting pipe be insured, because excessive leakage might, and breakage of this pipe, or its connections, would result in a false-clear failure at a stop-indication point.

7. The beginning and end of automatic train control territory should be plainly indicated.

8. As the magnetic receiver is the heart of the system in that it must respond to track impulses at all speeds up to the maximum possible, the equipment company has a standard of adjustment which it is essential shall be insured through the maintenance of such adjustment either by the equipment company or by the railroad acting under its instructions, and this receiver should be maintained in a sealed condition.

9. All crossovers between main tracks, or between main tracks and sidings, should be so arranged that when in use, maximum signal and train control protection will be afforded to main track traffic.

The object of this and similar inspections is that of constructive criticism; the pointing out of such matters as may be helpful to the carrier in checking an installation against the specifications and requirements of the commission, and comments concerning such other related points as our necessarily brief inspection may develop. The foregoing criticisms and comments are offered accordingly. They are not intended, nor are they to be taken, as a condemnation of this or any other device in connection with which similar criticisms may be offered.

# General Rate Structure Investigation

WASHINGTON, D. C.

THE Interstate Commerce Commission is organizing itself and its staff for the conduct of the general rate structure investigation, No. 17,000 on the commission's docket, ordered by congress in the Hoch-Smith resolution. For the time being, Chairman Aitchison and the three senior commissioners, McChord, Meyer and Hall, constitute a committee to keep in touch with the situation and bring forward to the full commission anything that may require its attention. This is understood to be a temporary arrangement and sooner or later the commission will delegate to a group of commissioners the conduct of the investigation. A committee of employees has been selected and is working on the case under the direction of the committee of commissioners. W. V. Hardie, director of the Bureau of Traffic, is chairman of the employees' committee.

In response to the suggestion in the commission's notice of the investigation it is beginning to receive statements of suggestions and views as to methods of giving effect to the resolution of Congress. Traffic officers and counsel of the railroads held a meeting on March 27 to consider their relation to the investigation but it is understood took no definite action.

The law firm of Clark & La Roe, of which Edgar E. Clark, former chairman of the commission, is a member, and which has participated in most of the recent big cases before the commission, has filed a statement expressing the view that Congress intended to direct the commission to deal with rates in a more comprehensive manner than heretofore, in part, as follows:

We believe that the resolution may be fairly interpreted as applying only to freight rates, and that the commission, in naming as respondents telegraph and telephone companies, cable companies and sleeping-car companies, may have interpreted too literally the phrase in the second paragraph of the resolution, and may have

extended the scope of the inquiry beyond what Congress intended.

We find in the resolution no principle of rate making that has not been heretofore considered and applied by the commission. But we do see in the language of the resolution a clear expression of policy or intent that extends beyond the application of rate-making principles to specific circumstances and conditions heretofore the subject of formal proceedings before the commission. The relationship of rates or analogous commodities selected by litigants as evidence in formal proceedings under the act has been often considered by the commission; the value of commodities has always been recognized in proper cases and the policy of Congress expressed in section 500 of the transportation act, 1920, has been carried out to the full extent of the commission's power. But the resolution contemplates a broader application of fundamental principles of rate construction and a more comprehensive recognition of economic influences affecting the national prosperity.

Formal complaints are ordinarily of limited scope and designed to further the interests of a particular industry or shipper. Usually such complaints embrace only a limited territory. They are so restricted in scope as to preclude a presentation, individually or collectively, that might meet the requirements of the resolution. The investigations of the commission pursuant to which the general rate increases and reductions have been approved have taken a wide range, but even in those investigations it has not been possible to develop adequately or to the extent contemplated by the resolution the circumstances and conditions incident to the "true policy in rate making."

Merely to apply the principles of the resolution to formal cases now pending would be inadequate. Merely to decide pending cases in accordance with the intent and purpose of the resolution would not satisfy either its letter or spirit. One of the principal objects of Congress must have been to direct the commission to deal with this important question in some manner more effective than the piece-meal methods heretofore pursued. The commission's order in No. 17000 instituting a general investigation is a necessary preliminary step in the effectuation of the expressed policy of Congress.

## Iron and Steel and Writing Paper

For some time there has existed, in certain quarters at least, a feeling that commodities of low value moving in large volume are required to pay more than their fair share of the transportation burden. Iron and steel articles move in Official Classification territory on the same rates as writing paper. A typical carload of l. c. l. freight from Chicago to New York (12,000 pounds, third class) yields $113.40 in freight revenue. A typical carload of fifth-class freight between the same points (40,000 pounds, fifth class) yields $224 per car. A carload of furniture or automobiles from Chicago to New York yields less revenue than a carload of grain. There has existed for some time a more or less general feeling that these things are not right, and the resolution is but a legislative expression of the same conviction, coupled with a mandate to the commission to make "such changes, adjustments, and redistribution of rates and charges as may be found necessary to correct any defects so found to exist."

The power to make rates is analogous to the taxing power, and a mandate to revise rate relationships throughout the nation's freight rate structure is a direction to exercise the rate-making power in such a manner as to determine what relative portion of the transportation burden should be borne by the various classes and descriptions of traffic. The resolution assumes that wrongs may exist and directs the commission to investigate and, if wrongs are found, to correct them. That the task is so large as to seem almost impossible of accomplishment serves only to emphasize the importance of the resolution and the necessity of making effective its purpose.

There has been of late a too general tendency to predicate rates on mileage. In a country so vast as ours, where commodities must move thousands of miles and where distances from different producing fields to common markets vary widely, it is not in the public interest to accept distance as the all-controlling factor. A distance scheme of rate making will encourage production in some portions of the country and discourage or prohibit it in others. The flexibility of rail rates has contributed largely to the general prosperity of the country. The Congressional admonition to the commission to "give due regard to . . . a natural and proper development of the country as a whole" should be construed as intended to foster the development of industry in all parts of the country along competitive lines, and as repudiating the suggestion that every rate should be based strictly on distance. Rates are to be made, not on theoretical bases, but to move traffic. It may not be presumed that Congress intended that the resolution should operate to destroy or to seriously impair competition which is the life of trade and which the Congress has so jealously guarded in all its legislative work.

The declared "true policy in rate making" is that the conditions which "at any given time" prevail in any industry, shall be considered "in so far as it is legally possible," in making rates on the products of that industry. Standing alone this provision would seem to require that if at any time any industry were depressed and its products not moving freely, rates on those products should be made as low as avoidance of confiscatory rates would permit. But this provision cannot be considered as standing alone because to do that would ignore or destroy the provision in the second paragraph that due regard shall be given to the general and comparative market values "as indicated over a reasonable period of years," and also the provisions in the second and third paragraphs that the rates prescribed must be "compatible with the maintenance of adequate transportation services."

It is neither practicable nor desirable that transportation rates should rise and fall with each increase or recession in the demand for any given commodity. A recession in demand for one commodity and an increased demand for an analogous or competitive commodity may occur simultaneously. The demand for a commodity may recede sharply or cease, simply because its use has become obsolete. An increased demand for a given commodity in a particular locality may be contemporaneous with a falling off in the demand for that commodity in a neighboring locality. New and modern products create new competition, or intensify existing competition, with articles that have in the past been free, or relatively free, from that competition.

Nothing is more certain than that in the commercial and industrial struggle the fittest will survive unless held down by arbitrary and artificial handicaps. It may not be presumed that the Congress intended that rate regulation should be used for such handicapping purposes. The entire industry must be considered for a period of years in order to determine whether or not its prosperity or lack of prosperity is due to unreasonableness or undue preference or prejudice in freight rates. That period of years should include a reasonable number of years during which conditions have been normal and reasonably stable.

It must be assumed that what the Congress seeks is those proper relationships between rates on the products of the several industries—considered in a broad generic sense—that will bring to industry generally the largest proper opportunities so far as transportation charges are concerned, that will be free from unjust discrimination and undue preference or prejudice, and that will provide "maintenance of an adequate system of transportation." It did not intend that any industry shall, because it is in a depressed condition, have rates that are unduly preferential, non-compensatory or unduly low. It did not intend that any carrier shall, because it needs the money, charge rates that are unreasonably high or that work undue discrimination, preference or prejudice as between commodities, producers or localities.

## Magnitude of Task

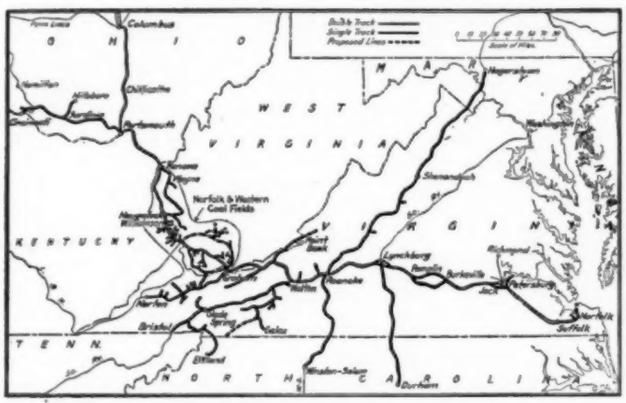
The real difficulty lies, not in understanding the principles laid down, but in applying them in a practical way. The task is so great that, whatever means may be devised by the commission for accomplishing it, years will be required to complete it. In our opinion the mere application of the principles of the resolution to cases now pending would fall far short of making effective the purpose of Congress. On the other hand, the resolution shows clearly that it was not the purpose of Congress that decision of pending cases should be materially delayed awaiting the outcome of the general investigation. It is our conviction that under the terms of the resolution the commission is required to proceed with this investigation in much the same manner as it has heretofore proceeded with comprehensive investigations. It will be noted that the resolution presupposes an extended investigation during which the commission shall from time to time, and as expeditiously as possible, make such decisions and orders "as it may find to be necessary or appropriate upon the record then made."

Inasmuch as two comprehensive investigations regarding class rates are now pending before the commission it would seem not illogical to first develop the facts with respect to the class rate structure of the country. However, a fair interpretation of the resolution in the light of the surrounding circumstances and conditions with which Congress is presumed to be familiar and under the well recognized canons of construction, confirms our conviction that the transportation rates on commodities moving a large volume were predominantly in the minds of the legislators and that the Congress contemplated inquiry with respect to those rates with the greatest expedition reasonably possible under the circumstances. The rates on occasional shipments of less than carload traffic and on the major volume of carload class traffic, while of great importance to shippers, carriers and consumers, are of less concern from the national standpoint than are the rates on agricultural products, coal, ore, building materials, and other heavy loading raw commodities constituting the bulk of carload freight and ordinarily moving under commodity rates. But as the maintenance of an adequate system of transportation must be kept in mind the commission must be able to find that the carriers may properly be required to stand reductions in revenues caused by reduction in rates or must find rates that may properly be increased to compensate in whole or in part for the reductions.

# Norfolk & Western Improves Property

## *Capital expenditures in* 1924 *total* $33,000,000—*Continues to benefit from coal situation*

IT is estimated that whereas formerly 60 per cent of the coal mined in the country came from union mines and 40 per cent from mines worked with non-union labor, at present the proportions are reversed. Most of the mines north of the Ohio—although by no means all—are union, and the greater number of those south are non-union. The situation in the coal industry in 1924, as a result of the new conditions in the industry, is pictured in the revenue car loadings figures, and particularly in the cumulative totals for each of the past five years. Thus, these figures show that in 1924 the total revenue coal loadings of the country were 10 per cent less than in 1923 and amounted to but 85 per cent of those of 1920. The




**The Norfolk & Western**

coal loadings in the eastern district in 1924 were but 82 per cent of the loadings in that district in 1920, and those in the Allegheny district but 77 per cent. In the Pocahontas district, however, coal loadings in 1924 were 137 per cent of those in 1920. Whereas in 1920 the Pocahontas district supplied about 11 per cent of the country's coal, on the basis of the coal car loadings figures, in 1924 that region supplied no less than 18 per cent of the nation's coal supply.

Such is the manner in which the roads in the Pocahontas district—the Chesapeake & Ohio, the Norfolk & Western and the Virginian—have been favored by the effects of the Jacksonville wage agreement and the operation of the mines in their territory by non-union labor not governed by the union miners' wage agreement. How long the roads in the Pocahontas region may continue to be thus favored is, naturally, a question. It is understood that attempts are being made here and there in the union fields to effect some method of disregarding the Jacksonville wage scale. On the other hand, the United Mine Workers are said to have in mind an ambitious campaign looking to the unionization of the western Virginia and West Virginia coal areas.

### Comparison with Chesapeake & Ohio

The evidence is to the effect that the Chesapeake & Ohio has benefited from the favored position of the non-union coal areas rather more than has its neighbor, the Norfolk & Western. There are four roads in the Pocahontas district, namely, the Chesapeake & Ohio, the Norfolk & Western, the Virginia and the Richmond, Fredericksburg & Potomac, the last named of which serves no coal mines. Complete figures are available for 1924 for the Norfolk & Western but not yet for the others. Coal loadings in the district in 1924 were 16 per cent greater than in 1923, and 37 per cent greater than in 1920. The increase shown by the Norfolk & Western was not quite as large as for the district as a whole. It is not absolutely correct to compare tonnage figures with car loadings figures, but it may be stated for what it is worth that the Norfolk & Western coal tonnage in 1924 was 10½ per cent greater than in 1923 and 25 per cent greater than in 1920. Another comparison may be effected with the figures of net ton-miles, because whereas in 1920 the Norfolk & Western moved 42.5 per cent of the net ton-miles of the Pocahontas region, in 1924 it moved but 39.7 per cent of the district's total. Norfolk & Western net ton miles in 1924 exceeded those of 1920 by 7 per cent, but in the case of the Chesapeake & Ohio the increase was 24 per cent.

### Improved Earnings

The improved position of the Chesapeake & Ohio as compared with the Norfolk & Western is further indicated by the remarkable improvement which the former has had in its net railway operating income. The standard return or average annual net railway operating income for the three years ended June 30, 1917—our best pre-war standard of earnings—was, in the case of the Chesapeake & Ohio, $13,266,983, and in the case of the Norfolk & Western $20,634,142. In 1924, however, the Chesapeake & Ohio had net operating income amounting to $21,892,920 whereas that of the Norfolk & Western was $22,468,428. These comparisons show many things. They contrast the somewhat spectacular recent development of the Chesapeake & Ohio with the rather more steady development of the Norfolk & Western. This is quite in keeping with the former history of the two properties because the Norfolk & Western has always shown a more conservative attitude towards the extension of lines into new coal areas than has its neighbor, which some believe has often extended them too fast for the good of the property as a whole. It is apparent, however, that both roads alike have benefited greatly from the peculiar advantages now accruing to the non-union coal areas.

### Coal 73.33 Per Cent of Total Tonnage

The Norfolk & Western serves five coal fields, namely, the Kenova, Thacker, Tug River, Pocahontas and Clinch Valley. Coal constituted in 1923, 73.33 per cent of the road's total revenue tonnage. Prior to the time when the non-union fields had the special advantages that they have today, the proportion of coal traffic used to average about 65 per cent. The five coal fields are adjacent and about at the center of the system's lines. The coal from them moves in part to tidewater at Norfolk. A considerable tonnage moves via Hagerstown to points to the north, principally reached by the Pennsylvania. Finally, an increasing portion of the coal output moves to the west, principally through Columbus where it is turned over to the Pennsylvania for movement to the lakes at Sandusky or, under the new conditions, for movement to points in

the central district which hitherto were supplied more largely by the union mines in southern Illinois. The fact that so much of the road's coal is turned over the Pennsylvania results from the community of interest between the two properties. At last reports the Pennsylvania owned not quite one-half the preferred stock of the Norfolk & Western and about one-third of the common stock. A year ago negotiations were under way looking to the leasing of the Norfolk & Western by the Pennsylvania, but they were not successful. There has been of late a persistent rumor in the financial districts that the Pennsylvania interests have been gradually increasing their holdings of the stock of the Norfolk & Western. In the four-system plan for the consolidation of the carriers in the eastern district proposed by the executives of the leading roads, the Norfolk & Western is allocated to the Pennsylvania.

NORFOLK & WESTERN

Comparison of Selected Operating Statistics, 1920 to 1924

| Unit | 1920 | 1921 | 1922 | 1923 | 1924 |
|---|---|---|---|---|---|
| Average mileage operated | 2,189 | 2,216 | 2,228 | 2,228 | 2,231 |
| Net ton miles, millions | 11,670 | 9,171 | 11,477 | 12,122, | 12,452 |
| Car miles per day | 34.3 | 25.0 | 31.1 | 33.7 | 35.6 |
| Net tons per loaded car | 42.1 | 41.5 | 42.9 | 41.8 | 42.1 |
| Per cent loaded to total car miles | 62.8 | 58.2 | 59.0 | 61.5 | 60.4 |
| Net ton-miles per car day | 908 | 603 | 788 | 867 | 908 |
| Freight cars per train | 45.5 | 46.9 | 47.0 | 46.8 | 49.6 |
| Gross tons per train | 2,118 | 2,059 | 2,136 | 2,178 | 2,324 |
| Net tons per train | 1,178 | 1,108 | 1,166 | 1,178 | 1,237 |
| Train speed-miles per train hour | 10.1 | 11.3 | 10.8 | 10.7 | 11.7 |
| Net ton-miles per train hour | 11.926 | 12.566 | 12.537 | 12.575 | 14.431 |
| Lb. coal per 1,000 gross ton-miles | 202 | 197-173* | 184 | 191 | 170 |
| Loco. miles per loco. day | 53.0 | 40.7 | 48.7 | 53.1 | 50.8 |
| % Freight locos, unserv | 31.4 | 16.9 | 18.3 | 22.0 | 15.8 |
| % Freight cars, unserv | 6.9 | 7.9 | 5.4 | 4.8 | 4.0 |

*Corrected figure.

## $33,000,000 for Capital Improvements

The Norfolk & Western annual report issued this week contains several details of striking interest, notably with reference to the large amounts of money spent for the improvement of the property. Maintenance of way expenses, for example, were about one-fifth greater than in 1922 or 1923. There were spent for additions and betterments no less than $33,000,000, or about $12,000,000 for roadway and $21,000,000 for equipment. The net addition to capital account after deductions for retirements and depreciation totaled about $26,000,000, equivalent to the total spent in any other two years of the road's history.

## 1924 Earnings and Expenses

The 1924 income statement shows a net corporate income after fixed charges of $18,243,348, equivalent, after allowance for the $919,692 4 per cent dividends on the preferred stock, to $12.85 on the $134,794,300 outstanding common stock. The company's net after charges in 1923 was $18,788,497 but the income account for the year included nearly $3,000,000 of payments in connection with the settlement with the United States Railroad Administration. The company pays 7 per cent regular dividends on its common stock and an extra dividend of one per cent. The net railway operating income in 1924 totaled $22,468,429, equivalent to a return of 5.74 per cent on the company's property investment. The net railway operating income in 1923 totaled $19,877,677, and was equivalent to 5.41 per cent on the company's property investment. However, it happens that the 1924 figure includes an item of $3,108,667, representing revenue from interline business in December. The inclusion of this item is explained as follows: "It has been the company's practice for many years to include in its figures of operating revenues for each month the revenue from local business for that month and the revenue from interline forwarded and received business for the preceding month. Under a recent order of the Interstate Commerce Commission, it was necessary, beginning with December, 1924, to include the revenue from interline business in the figures for the month in which it was earned. Figures for the year 1924, therefore, include the revenue from interline business for the thirteen months December, 1923, to December, 1924, inclusive."

Without the inclusion of the December interline revenues, that is, keeping the comparison on the same basis, the 1924 total operating revenues would have totaled $94,580,674, a decrease of $1,011,008 or 1.06 per cent from 1923. This decrease was in spite of the increase of 10½ per cent in coal tonnage. As a matter of fact, the Norfolk & Western moved, in 1924, 4.35 per cent more revenue tons and 8.68 per cent more revenue ton-miles than in 1923. However, the increased proportion of coal was reflected in a decrease in the revenue per ton-mile earnings from 0.729 cents in 1923 to 0.699 in 1924. It is interesting to observe that prior to the war the Norfolk & Western used to have earnings per ton-mile of only slightly over 4 mills. The Norfolk & Western did not move as many revenue tons in 1924 as in various previous years, notably 1916, 1917, and 1918. Its 1924 revenue ton-miles were the largest for any year except 1917 and 1918.

## Expenses Decrease

Contrasted with the decrease in gross operating revenues of 1.06 per cent, there was a decrease of 3.75 per cent in total operating expenses. The operating ratio in 1924 (exclusive of the December interline revenues) was 73.88; that in 1923 was 75.95. The operating expenses in 1924 totaled $69,875,109. This was a decrease of $2,723,762, as compared with 1923. In 1924, as compared with 1923, there was a decrease of $2,343,770 or 9.32 per cent in maintenance of equipment expenses, although at the end of the year the percentage of unserviceable equipment was less than at the beginning. There was a decrease of $2,780,601 or 8.69 per cent in transportation expenses. The 1924 ratio of transportation expenses to total operating revenues was 29.90; in 1923 it was 33.54. The main-

NORFOLK & WESTERN OPERATING RESULTS, SELECTED ITEMS, 1914 TO 1924

| Year ended June 30 | Mileage | Total operating revenue | Total operating expenses | Operating ratio | Revenue tons | Revenue ton miles millions | Average haul | Revenue per ton miles, cents | Revenue train load | Revenue car load | Net railway operating income | Return on investment | Net after charges |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1914 | 2,036 | 44,470,619 | 29,935,842 | 67.32 | 34,000,572 | 9,155 | 269 | 0.415 | 802 | 31.60 | 14,020,688 | 5.21 | 10,462,426 |
| 1915 | 2,042 | 42,987,044 | 27,831,815 | 64.74 | 32,767,701 | 8,918 | 272 | 0.410 | 841 | 32.56 | 14,359,735 | 5.22 | 10,409,905 |
| 1916 | 2,059 | 57,304,586 | 32,181,346 | 56.16 | 44,373,456 | 11,795 | 266 | 0.420 | 967 | 33.77 | 24,045,710 | 8.48 | 20,624,059 |
| Year ended Dec. 31 | | | | | | | | | | | | | |
| 1916 | 2,080 | 59,449,982 | 33,508,732 | 56.36 | 46,421,391 | 12,110 | 261 | 0.422 | 980 | 33.94 | 24,866,782 | 8.65 | 21,800,074 |
| 1917 | 2,085 | 65,910,242 | 41,161,503 | 62.45 | 48,196,792 | 12,456 | 258 | 0.453 | 1,021 | 34.87 | 21,928,006 | 7.23 | 18,946,137 |
| 1918 | 2,084 | 82,004,034 | 61,579,297 | 75.09 | 46,801,920 | 12,255 | 262 | 0.561 | 1,041 | 37.37 | 16,450,087 | 5.17 | 15,804,526 |
| 1919 | 2,088 | 76,925,599 | 64,021,285 | 83.22 | 37,944,615 | 10,026 | 264 | 0.625 | 1,106 | 37.48 | 8,176,538 | 2.51 | 14,513,779 |
| 1920 | 2,200 | 88,489,356 | 84,943,837 | 95.99 | 40,685,743 | 11,063 | 272 | 0.668 | 1,107 | 39.90 | 3,612,843 | 1.05 | 12,496,788 |
| 1921 | 2,226 | 80,718,802 | 64,346,857 | 79.72 | 29,684,935 | 8,482 | 286 | 0.793 | 1,013 | 38.35 | 14,870,020 | 4.27 | 10,043,181 |
| 1922 | 2,238 | 90,352,887 | 68,052,804 | 75.32 | 37,357,078 | 10,422 | 279 | 0.745 | 1,049 | 38.99 | 18,624,468 | 5.21 | 14,554,989 |
| 1923 | 2,238 | 95,494,687 | 72,598,871 | 76.05 | 42,574,883 | 11,162 | 262 | 0.729 | 1,076 | 38.49 | 19,877,677 | 5.41 | 18,788,497 |
| 1924 | 2,241 | 94,580,674 | 69,875,109 | 73.88 | 44,425,701 | 12,130 | 273 | 0.699 | 1,199 | 41.06 | 22,468,429 | 5.74 | 18,243,348 |

tenance of way expenses in 1924 totaled $14,801,044, an increase of $2,392,068 or 19.28 per cent. The Norfolk & Western usually reports a credit freight car per diem balance. In 1924, it had a credit balance of $1,726,291; this compared with $3,003,995 in 1923 and with $2,161,002 in 1922.

Reference was made above to the unusually large sums spent for capital improvement in 1924. It was noted that the net increase in the property investment account was equal to that of any two previous years. It was nearly double that of any other previous year. The amount spent for improvements to roadway, $12,233,981, was similarly nearly double the amount devoted to this purpose in any previous year. The expenditure involved no particularly extensive single project but was, rather, distributed over a comparatively wide range of purposes. The most important single item was $4,228,944 for additional main tracks; $1,573,168 was spent for rails and fastenings; $959,388 for bridges, trestles and culverts; $906,504 for electric power transmission; $809,520 for shops, enginehouses and terminals, etc. Important projects under way include the extension of the electrified line from Farm, W. Va., to Iaeger, increasing the electrified mileage by 22, now about completed and the further extension from Iaeger to Williamson. The road's double track mileage was increased during the year by 20, representing chiefly the work incident to double tracking the main line south of Kenova. The completion of this work will give three running lines between Kenova and Naugatuck and greatly facilitate the movement of west-bound coal. The road has recently improved its line between Portsmouth and Cincinnati to permit the use of larger power.

The capital expenditures for equipment in 1924 totaled no less than $20,914,268 and the net addition to the equipment account after retirements and depreciation was $13,650,044. The most important acquisition in 1924 was 6,000 70-ton steel hopper cars and 2,443 gondola cars were rebuilt following 1,950 similarly rebuilt in 1923. The Norfolk & Western has within the past two or three years engaged in a most extensive rolling stock rehabilitation program, which has included extensive retirements, rebuilding and installation of new equipment. It is of interest that whereas the road had at the end of 1922 47,461 freight cars, at the end of 1924 it owned only 42,171. The total carrying capacity of the cars, however, decreased only slightly from 2,615,385 tons at the end of 1922 to 2,493,236 tons at the end of 1924. The result has been a substantial increase in the revenue car-load and revenue train-load, which in 1924 were respectively 41.06 tons and 1199 tons. This is an interesting indication of the manner in which the Norfolk & Western keeps up with the demands of traffic and refuses to let itself be overburdened with tonnage that it is not in position to handle with economy.

The usual table of operating statistics given with the article shows favorable figures and trends. In 1924, as compared with previous years, the features of particular interest are the increases in traffic, the increased gross and net train-load, the substantial increase in ton-miles per train hour, and the excellent condition of the equipment.

The Norfolk & Western seems to be in an unusually favorable position that does not appear to be of temporary character. It is not difficult to understand the Pennsylvania's interest in the property or the continuing belief, at least, that the Pennsylvania still desires it even though the lease negotiations were not carried to fruition.

# Trend in Motor Equipment Design*

By E. J. Brennan
Superintendent of Motive Power, Chicago Great Western, Oelwein, Iowa

IN the past year quite a few additional cars of the self-propelled type have been built for various railroads, and the Chicago Great Western has installed in the interim, one gas-electric car, two mechanical gear-driven, two-car trains and one steam car. The following data relates to these cars:

GAS-ELECTRIC CAR M-300

| | |
|---|---|
| Length of body | 57 ft. 4 in. |
| Width | 9 ft. 8⅝ in. |
| Weight | 76,400 lb. |
| Baggage compartment | 156 sq. ft. |
| Seating capacity | 50 |
| Type of body construction | steel |
| Standard A. R. A. journal bearings | 4¼ in. by 8 in. |

TWO SYKES TRAINS NOS. M-207, MT-208, M-209 AND MT-210

| | |
|---|---|
| Total length of motor car | 46 ft. 10 in. |
| Total length of trailer | 52 ft. |
| Width | 8 ft. 6 in. |
| Weight of motor car | 50,000 lb. |
| Weight of trailer | 36,400 lb. |
| Baggage compartment | 120 sq. ft. |
| Trucks equipped with Hyatt roller bearings. | |
| Seating capacity, motor car | 30 |
| Seating capacity, trailer | 52 |
| Type body construction | steel |

The steam car has been developed by installing in the forward end of a McKeen car a tubular boiler, automotive type, working at a pressure of 500 lb. actuated by an oil-fired furnace. The engine in this unit is a six-cylinder compound having three low pressure cylinders, 7-in. bore by 7-in. stroke, and three high pressure cylinders having a 5-in. bore and a 7-in. stroke. This steam car has been handling a 35-ton combination mail and baggage car 55 ft. long making a total light weight of the train, 90 tons, or an average loaded weight of approximately 100 tons. This car has been in service between Oelwein, Iowa, and Ft. Dodge, a distance of approximately 260 miles a round trip each day, making 44 stops averaging 1¾ min. each on a schedule of 24.2 miles per hour.

The above reference to the steam car is preliminary to a final report which will be made by the builders after certain changes now being made to the engine and boiler have been completed and further data compiled at which time an official announcement will be made.

In the various units of equipment recently built, U. S. standards and steam railway practices have been followed in the general construction except the weights, which, generally speaking, are consistent with that type of equipment. In other words, the body design while it is of far lighter construction than standard railway coaches, combination cars, etc., is somewhat heavier than some of the more recently built rail motor cars.

Our gas-electric car, although designed to haul a 35-ton coach or trailer, at this time is doing very much more.

*From a paper read on March 26, before the Minneapolis Section of the Society of Automotive Engineers.

The car is and has been operating between Osage, Iowa, and Hayfield, Minn., in local main line passenger service, pulling a combination mail and express car weighing 54½ tons, a distance of 70 miles each day, or betwen McIntire and Hayfield, on a schedule of 26 miles an hour. The entire daily run for the car is only 104 miles, 70 of which, as stated, is traveled handling the 54½-ton combination car.

A few minor defects have developed on this unit but they have been very quickly corrected.

### Gas-Electric Operates with Throttle Control

The control of the gas-electric car (described on page 371 of the August 30, 1924, *Railway Age*) is very dependble in that it is operated by a control similar to that of a steam locomotive. The first notch on the throttle operates an air starting system which allows the operator to stop the entire power plant by simply closing the throttle and to start the power plant and the car by opening the throttle when he is ready to proceed. This results in a noticeable economy in fuel consumption and maintenance, as gasoline engines develop carbon very rapidly when idling. This system of operation fits in well on steam railroads due to using locomotive enginemen for operators. This car is heated throughout by an Arcola hot water heater to which the builders have attached the water circulating system of the engine so that when the car is obliged to lay over during severe weather it is not necessary to drain it and the possibility of the radiator, piping, engine and other appurtenances freezing is elimnated.

The next two trans for the Chicago Great Western were purchased from the Sykes Company, St. Louis, and are similar to the preceding units except that they are considerably better owing to the inclusion of certain refinements incorporated as a result of our past experience. This refers to better construction of the body which did not materially increase the weight and an increase of at least 50 per cent in the strength of all driving parts. The trains referred to have been built somewhat longer than our previous units to provide more passenger seating capacity as well as additional baggage carrying facilities. A few changes have been made in the spark control of the engine which caused some trouble on account of not being fitted up substantially enough for the service in that a pressed fit was used which we were later obliged to weld solid in order to get it to hold. A roller bearing is used in the trucks of these cars which gave us trouble in the beginning owing to the inner sleeve of the bearing not being applied tight enough. Due to this the sleeves would work off the axle, come in contact with the outer bearing cap and generate sufficient heat to burn up the packing and lubrication, causing a complete failure. This can be overcome by adhering more closely to the mounting pressures reommended by the A. R. A. and used universally in American steam railroad shops. A better system of electric generation and storage by means of an axle lighting device and storage battery has been arranged for.

### Sykes Trains Make 260 Miles a Day

One of the two Sykes trains referred to is running between Ft. Dodge, Ia., and Council Bluffs, a distance of 268 miles a day, every day. The motor car of the other train is operating between Oelwein and Ft. Dodge, a distance of approximately 260 miles a day, every day, and is handling a mail and express car that weighs 35 tons light with an average of 10 tons of baggage and express, or equivalent to a 45-ton trailer, and is handling it very successfully.

On some of the units of equipment previously purchased, the cars were equipped with traction brakes which could not be operated in connection with standard steam railway automatic air brakes. These have been changed over, however, and we strongly urge from our experience that future units of motorized equipment be supplied with brakes that will operate in conjunction with the standard coaches, the foundation brake gear on some of the motor cars has been constructed too light, and not enough attention has been given to it generally with respect to clearances as the various parts wear. Instances have been known where, with the slightest amount of lost motion, the brake levers would strike some part of the truck frame before the average brake cylinder piston travel was experienced.

The Chicago Great Western also has on order at this time, but its construction has not been completed as yet, a 25-ton six-wheel gasoline switching locomotive that it is proposed to operate on a branch line running from Cedar Falls Junction to Cedar Falls, Iowa. This locomotive is being built by the Baldwin Locomotive Works and is designed to pull about five loads and one coach at a maximum speed of 18 miles per hour.

These various units of equipment are indicative of the trend in design of motorized equipment on steam railroads. Three years ago we were talking single cars with a baggage space of approximately 50 sq. ft., seating capacity from 36 to 40 passengers, light weight approximately 15 tons, designed to run 40 miles an hour on level track. In this short period of time we have realized the 100-ton motorized train, traveling at 50 miles an hour.

It would be opportune to say at this time also that we are getting very fair service out of our older units of motorized equipment including the first Sykes train, the Service car and the McKeen cars.

Gasoline Motor Car Data

| Motor Car | Trailer | Period covered | Miles run | Cost per mile run, cents: Operation | Maint. | Total | Miles run per Gal. gas. | Pt. oil |
|---|---|---|---|---|---|---|---|---|
| M-200 | MT-201 | Oct. 1922 to Jan. 1925. | 59,304 | 22.92 | 11.30 | 34.22 | 4.01 | 13.62 |
| M-205 | MT-206 | Aug. 1923 to Jan. 1925. | 65,870 | 21.16 | 7.33 | 28.45 | 2.62 | 11.36 |
| M-300 | ..... | Aug. 1924 to Jan. 1925. | 18,914 | 23.29 | 4.68 | 27.97 | 2.14 | 10.42 |
| M-400 | ..... | Nov. 1922 to Jan. 1925. | 102,779 | 19.67 | 2.66 | 22.33 | 5.97 | 17.60 |
| 1001 | ..... | Oct. 1922 to Jan. 1925. | 78,982 | 25.56 | 8.75 | 24.13 | 1.83 | 7.65 |
| 1002 | ..... | Jan. 1925... | 1,270 | 21.67 | 6.33 | 28.00 | 1.23* | 4.41 |
| 1000 | 1025 | May 1923 to Jan. 1925. | 35,410 | 28.08 | 20.79 | 48.87 | 1.56 | 3.19 |
| 1003 | ..... | July 1923 to Jan. 1925. | 75,982 | 22.60 | 2.48 | 25.08 | 21.27 | 5.13 |

*1.23 gal. of fuel oil per mile.

### Special Gas Engine Maintenance Department Developed

The results given above in miles run and costs both for maintenance and operation, also the performance with respect to oil and gas consumption, suggests another very important thought and that is that the Chicago Great Western found it necessary to develop a gas engine department for the care of these cars and this department we know is to a great degree responsible for the successful performance of our motor cars. We have in our gas car organization a motor car expert who is on my immediate staff and whose jurisdiction extends over the entire system in seeing that the cars are maintained and assisting and instructing enginemen who wish to qualify as motor car operators. At our main shops at Oelwein we have a gas engine repair organization consisting of a foreman and several mechanics, helpers and apprentices who are engaged on gas engine work entirely. This refers to heavy and medium repairs particularly. For the light repairs on cars laying over at the engine terminal or roundhouse a specially trained gas engine mechanic is

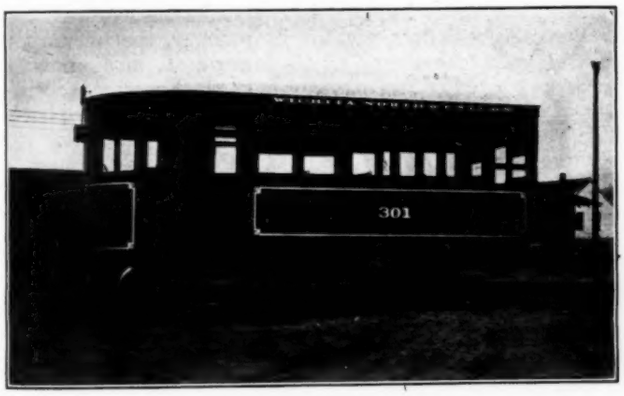
employed to see that the cars and their equipment are properly cared for and repaired.

The Chicago Great Western is now considering the building of a separate repair shop close to but somewhat removed from the main plant owing to the fire hazards existing. The building that we have in mind will be erected consistent with the type and the number of units of equipment that we now have. It will be equipped with special machinery for repairs to our motor cars.

In conclusion, in the construction of motor cars it is always well to bear in mind accessibility in order to facilitate repairs. This refers not only to the truck and body construction but to the engine as well.

## Gasoline Rail Car Operated by One Man

THE gasoline motor-driven rail car illustrated runs on the Wichita Northwestern between Kinsley, Kans., and Pratt. It is designed for one man operation. The car was built at the company's shops located at Pratt. Power is furnished by a Reo four-cylinder automobile-type motor. The car body is of steel with a steel underframe. Wheels 30 in. in diameter and having a standard flange contour, are provided on the rear axle, 24-in. wheels being used in front. All journals are equipped with Timken roller bearings. Braking effort is obtained by means of Westinghouse air brake equipment, the air being furnished from a compressor connected to the main drive shaft. The car has electric




**Gasoline Rail Car Built at Pratt, Kans., Shops of the Wichita Northwestern**

lights, an air whistle and is heated by the exhaust from the engine.

Seats are provided for 19 passengers exclusive of the motorman, who has a separate compartment. The motorman acts as the entire crew, taking tickets and handling mail and express. This car makes a round trip of 106 miles a day between Kinsley, Kans., and Pratt, making nine station stops one way in a running time of two hours and forty-five minutes. In one year the car made 33,178 miles and carried 5,616 passengers, having a total passenger mileage of 131,741. The operating cost for this year amounted to $3,768.89 made up as follows: Motorman, $1,881.77; running repairs, $912.80; gasoline, $756.51; oil and other supplies, $217.81. The construction and upkeep of a car of this type does not require any additional machinery or tools than those found in any ordinary railroad shop. Gasoline cars have been operated on this particular line in Kansas since 1913.

## A History of Demurrage

UNIFORM interpretation of national car demurrage rules was the subject of the principal paper presented at the meeting of the Central Railway Club, Buffalo, N. Y., on March 12. It was by J. F. Chalfant, manager of the Department of Demurrage Supervision, for Trunk Line and Central Freight Territories, of the Transportation Division of the American Railway Association. Mr. Chalfant gave a very interesting and detailed history of the doings of the railroads in this field since 1887. Up to that year regulations requiring the assessment of demurrage were either non-existent in tariffs or bills of lading, or, if there, they were more honored in the breach than in the observance. Although Mr. Chalfant says that the late Colonel William B. Wilson, in charge of car distribution on the Pennsylvania Railroad, at the time of the Civil War, made some use of this means of hastening the unloading of cars, demurrage never became an effective force in the promotion of economy in freight car operation until the establishment of the car service association at Omaha, Neb., in 1887, the first organization of the kind. The Omaha experiment, proving immediately successful, was soon followed by similar action at other cities; and in 1889 the General Time Convention (now the American Railway Association) adopted a uniform code of rules for this service. Before long, the Chicago Car Service Association was attacked in the courts as an unlawful restraint of trade, and there were numerous other obstacles to smooth progress; but a few enthusiasts persisted and progress was kept up in spite of hindrances. "The average basis" of charging for demurrage was started in Philadelphia about 1891, and later the complete debit and credit system, as now used, came into extended use. The National Association of Car Service Managers was organized in 1889, and A. G. Thomason, now demurrage commissioner for New England, was secretary of that organization for many years.

In October, 1908, the National Association of Railway Commissioners took a hand in the matter and in 1910 the National Code of Rules, formulated by a committee headed by Franklin K. Lane, of the Interstate Commerce Commission, came into general use. During the last half dozen years the National Industrial Traffic League has taken an active interest in this feature of railroad service. Following this historical sketch, Mr. Chalfant quoted the principal court decisions by which the railroads are fortified in the enforcement of equitable demurrage charges; and he closed with an appeal to all employees of the operating departments of railroads to give intelligent co-operation to the station agents in carrying out demurrage rules.

Continuing, he said: "My experience has been that as much dissatisfaction on the part of patrons arises from the manner in which the carriers advise claimants of their decisions, as from any other source. To merely say to a patron that under the tariff his claim must be declined is often very exasperating, because it is calculated to put him under the impression that you are arbitrary. It is all very well to write short letters if they tell all the story; but if not, then it means more lost effort in additional correspondence than if a complete explanation had been given in the beginning. The big majority of patrons are thoroughly honest and do not seek to evade their responsibilities; but it is only human nature, if one is told he is wrong, to desire to know just exactly why. Therefore, when it is necessary to decline a demurrage claim, if you will endeavor to convince the claimant so that he may clearly understand why your decision is correct, there will exist all the difference between a satisfied patron who trusts you, and a dissatisfied one who distrusts you."

# C. & E. I. Train Control Approved

## *I. C. C. reports on Miller system with forestalling feature— In service since* 1914

WASHINGTON, D. C.

THE Interstate Commerce Commission on March 30 made public its report, approving after inspection and test, the installation of the automatic train-stop system of the Miller Train Control Corporation, with forestalling feature, which has been in service since November 17, 1914, on the Chicago division of the Chicago & Eastern Illinois. The report is by Division I of the commission, Commissioners Esch, Lewis and McManamy, and is dated March 27. As a result of the inspection and test, completed January 21, the report finds that the installation meets the requirements of the commission's specifications and order; and it states that the device is approved except as to three details indicated, one of which affects only six locomotives and another of which finds unnecessary the ramp-displacement detectors applied to six ramps. Four recommendations are also made for precautionary measures involving the signal system, to be complied with by the railway company.

The Chicago & Eastern Illinois is one of the 49 railroads required by the commission's order of June 13, 1922, to instal automatic train-stop or train-control devices on portions of their respective roads, and its installation was one of the three (in service at that time) upon which the commission's order was predicated. The first of the 49 installations to be approved was that on the Chicago, Rock Island & Pacific, which was approved on December 17, 1923. The Chicago & Eastern Illinois installation is the second one of the 49 and the first plain automatic stop with forestalling feature to be approved after inspection. The commission's original specifications did not provide for the forestalling feature but the order was amended to permit it on July 18, 1924. The report of the commission, omitting the detail description of the device, is as follows:

### Report of the Commission

The device is an automatic train stop of the intermittent electrical-contact type with forestalling feature. This device was first placed in service on the northward track of the Chicago & Eastern Illinois Railway between Danville, Ill., and Hoopeston, Ill., a distance of approximately 24 miles, the installation being completed on October 9, 1913. On December 9, 1913, the installation on the southward track was completed between these same points. The system was completed on July 14, 1914, from Hoopeston, Ill., to Watseka, Ill., both tracks, a distance of approximately 22 miles. On August 15, 1914, the installation was completed on the double track from Watseka, Ill., to Momence, Ill., a distance of approximately 27 miles, and on the double track between Momence, Ill., and Chicago Heights, Ill., approximately 23 miles, it was completed October 9, 1914. The final installation from Chicago Heights, Ill., to Dolton Junction, Ill., approximately 10 miles of double track, was completed November 1, 1914.

The installation inspected and tested was placed in service on November 17, 1914, and extends from North yard at Danville, Ill., to Dolton Junction, Ill., approximately 106 miles, double track, with 176 ramps controlled through automatic and interlocking signals.

The automatic signal system throughout this territory consists of normal-clear, three-position, upper and lower quadrant, electric, ground, semaphore signals. Red, yellow, and green are the night indications for stop, caution and proceed, respectively.

Of the Chicago & Eastern Illinois locomotives, 104 are equipped with this device, and in addition 30 locomotives of the Elgin, Joliet & Eastern Railway have also been so equipped, the latter being completed September 29, 1924. These Elgin, Joliet & Eastern locomotives operate over the train-stop equipped territory of the Chicago & Eastern Illinois Railway for a distance of about 81 miles.

From May 1, 1921, to July 31, 1921, and from February 1, 1922, to April 30, 1922, the installation was under continuous observation by representatives of the Bureau of Safety of the Interstate Commerce Commission and the joint committee on automatic train control of the American Railway Association.

### Operation of System

When a signal in advance is at clear or caution the locomotive shoe receives energy from the ramp and so causes a clear or proceed indication to be transmitted to the locomotive apparatus. When a signal in advance is at stop the locomotive shoe receives no energy from the ramp.

As the shoe glides along the ramp the shoe plunger piston is raised, and if the ramp is deenergized the air quickly escapes, as the solenoid magnet in this case remains deenergized and does not lift its plunger, the pneumatic control valve remaining in its lowermost position, with an unobstructed or free passage from the lowermost chamber of the operating-piston cylinder to the atmosphere. This results in a sudden fall in the pressure in this chamber to a point below that in the chamber above the operating piston; this piston being forced to the lower end of its travel, during which, by means of its attached chain, sheave wheel, and the brake-valve handle lug on the latter, it pulls the handle of the automatic brake valve around to the service position and leaves it there. Brake-pipe air can then exhaust at the established rate for a service application of the brakes.

After the ramp shoe passes off of the ramp, combined spring and air pressure promptly returns the shoe plunger piston to its lowermost position, where it shuts off the exhaust from its cylinder and permits a quick recharging of the system, which results in balancing the pressures on the operating piston, permitting the sheave-wheel return spring to pull the operating piston to its normal position. During this return movement, however, the brake-valve handle is not automatically moved.

In case it is desired to forestall an automatic application, the engineman may do so by holding the plunger of the solenoid magnet in the uppermost position, thus seating the valve and preventing escape of air from the lower chamber of the operating piston in the same manner as though the solenoid magnet had received energy from a ramp.

When forestalling, as above described, is not accomplished just before passing a deenergized ramp, the brake-valve handle will automatically be moved to service application position as stated, and will be held in that position by the operating piston on account of the simultaneous functioning of the positive stop valve. This positive-stop valve is located outside of the cab at a point sufficiently

remote therefrom to require the engineman to alight and close it from the ground.

The brake-valve handle may manually be moved to emergency position at any time during an automatic operation.

Our order in *Automatic Train-Control Devices, supra,* provides:

> That each installation made pursuant to this order shall, when completed, be subject to inspection by and the approval of the commission or any division thereof to which the matter may be referred.

Accordingly, the purpose of this inspection and test was to determine whether or not the installation was made in accordance with the plans furnished by the carrier and the specifications and requirements of our order.

As a result of this inspection and test, it was found that the installation meets the requirements of the commission's specifications and order in *Automatic Train-Control Devices, supra,* and it, therefore, is approved, except as hereinafter indicated:

1. Pneumatic control valve drawing, D-100-A, December 24, 1924, with forestalling and positive-stop feature, is designed in conformity with mechanical principles, substantially constructed, and is capable, when properly maintained, of functioning as intended. Provision should be made, however, for preventing the possibility of an accumulation of frost or ice from restricting the passageway in the conduit between the control valve and the ramp-shoe housing sufficiently to result in failure on the danger side. The pneumatic control valve, designated as "Reverted to No. 4 valve" on plan dated January 7, 1925, and applied to six locomotives (Nos. 626, 1001, 1009, 1014, 1020 and 1023) is open to such criticism that as at present designed it cannot be approved.

Those locomotives, the train-stop equipment of which is not in accordance with plan D-100-A, December 24, 1924, as above, must be equipped in accordance with such plan to warrant approval.

2. To prevent any possible alteration upward of the adjustable height of the ramp contact shoe, a filler block should be placed in each bolting-flange slot between the lower bolt and the lower extremity of the slot.

3. With the ramp-displacement detector which was found to be applied to six ramps, there is a possibility of the line control wire which is looped through the detector becoming grounded, and with the rugged construction of the ramp used in this installation it is believed that such detectors are not necessary.

The Chicago & Eastern Illinois Railway Company will be expected to comply at once with the following requirements as to inspection, tests and maintenance:

1. Arrangements should be made for careful inspection and test of the train-stop equipment on all locomotives operated in train-stop equipped territory upon arrival at and before departure from designated inspection and repair points. The inspection and test should include all parts of the apparatus, and before each trip the sealed cut-out valve should be inspected to see that its seal is unbroken and the apparatus properly cut in for service. A daily report as to the condition of the apparatus should be made on a form provided for that purpose and forwarded by the inspector to a designated officer.

2. The roadside apparatus should be frequently inspected and tested for crosses and grounds and the ramps frequently inspected to insure that they are in proper operative condition; reports thereon being made on a form provided for that purpose and forwarded by the inspector to a designated officer.

3. A form should be provided for and used by each engineman in reporting failures of the apparatus and any irregularities in the operation of the device. All such information should be reported in detail.

Certain situations were noted which, in our opinion, should be corrected by the railway company as a precautionary measure in order to secure a greater degree of safety and to prevent a possible failure properly to protect train operations, in so far as it concerns the signal system upon which the train-control device is superimposed. In the following specific respects the railway company should promptly take the necessary action to carry into effect the recommendations made:

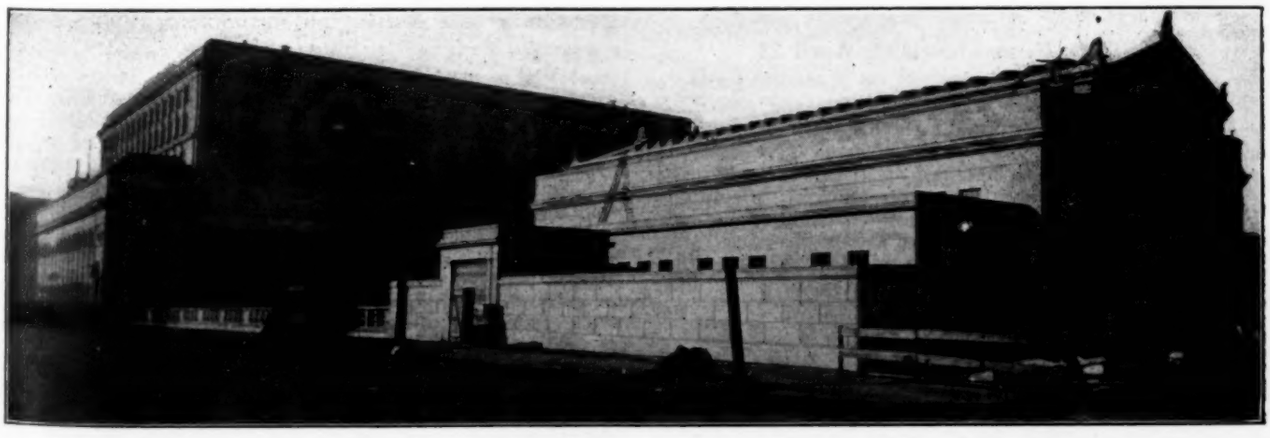
1. The interval between a ramp and the signal in advance should be sufficient in all cases to provide adequate braking distance.

2. At crossovers such arrangements should be made as to afford maximum signal protection to main-track traffic.

3. All movements leading to main tracks should be protected through the signal system.

4. For movements at and through interlocking plants ramps should only be energized for high-speed routes.

While these recommendations do not reflect upon the train-control device itself, we feel that as a matter of precaution the carrier's attention should be called to them and it should comply therewith in order that the greatest degree of safety may be insured. The attention of the Chicago & Eastern Illinois officials has been called to these matters.



*Underwood & Underwood*

**Chicago Union Station, Now Nearing Completion**

# General News Department

**The Ann Arbor Railroad,** in tribute to the memory of Newman Erb its late president, who died in New York on March 25, had all trains on the road stopped, and all work on the property suspended at 11 o'clock in the morning of March 27, the hour set for the funeral in New York.

**Two train robbers** using a forged pass entered an American Express Company car on the New York Central's Buffalo Express at Englewood station, Chicago, on March 28, bound and gagged the messenger and escaped at LaPorte, with an amount of money variously estimated at from $1,000 to $50,000. The two men entered the express car at Englewood station and after showing the messenger a forged letter and requesting him to let them ride with him bound and gagged the messenger and gathered up the packages of money.

**W. B. Storey,** president of the Atchison, Topeka & Santa Fe, and C. W. Galloway, vice-president of the Baltimore & Ohio, are to be guests of honor and speakers at a dinner given by the Mid-Day Luncheon Club in Springfield, Ill., on Wednesday evening, April 15. W. G. Bierd, one of the receivers for the Chicago & Alton, is to act as chairman at the dinner. Invitations are being sent to about 45 railway presidents and vice-presidents and to several hundred representatives of railroads in the middle west.

## New York Railroad Club Meeting

Prof. Winthrop M. Daniels, Thomas De Witt Cuyler Professor of Transportation at Yale University, will address the New York Railroad Club at its meeting on Friday evening, April 17, on "What Branches of Transportation Should Technical Schools and Universities Attempt to Teach?" The Baltimore & Ohio Glee Club will render a musical program, the first part of which will precede Professor Daniels' address and will be broadcast over WJY from 8:15 to 8:45. The second part of the Glee Club program will follow the address.

## Pacific Railway Club

The following officers of the Pacific Railway Club were elected at the eighth annual meeting in San Francisco, Cal., on March 12: President, A. S. McKelligon, general storekeeper, Southern Pacific; first vice-president, J. A. Christie, superintendent of terminals, Atchison, Topeka & Santa Fe; second vice-president, W. T. Small, general superintendent of motive power and equipment, Northwestern Pacific; treasurer, R. G. Harmon, chief clerk, Western Pacific-Rio Grande Western. W. S. Wollner, who has been secretary of the club since its organization, was re-elected.

## A. S. C. E. at Cleveland, April 22

The fifty-fifth annual convention of the American Society of Civil Engineers will be held at Cincinnati, Ohio, on April 22-24, with the Hotel Gibson as convention headquarters. The program on Wednesday afternoon, April 22, will be devoted to a symposium on the relation of the Ohio river and its tributaries to transportation in the United States with papers by Frank H. Alfred, president and general manager, Pere Marquette, Detroit, Mich.; Julian A. Pollak, vice-president, Pollak Steel Company, Cincinnati, Ohio; C. W. Kutz, colonel, Corps of Engineers, U. S. A., and division engineer, Central division, Cincinnati, Ohio, and H. B. Luther, professor of civil engineering, University of Cincinnati, Cincinnati, Ohio.

## The Railroad Y. M. C. A. in 1924

In 1924 expenditures authorized for new buildings and additions to existing buildings for use by the Railroad Y. M. C. A. totaled $1,542,300. The membership in 1924 in Canada and the United States was 127,842, an increase of 20,008 over the previous year. During the year nine meetings were conducted under the auspices of the Railroad Y. M. C. A. to discuss "Some of the fundamental principles involved in right relationships among railway men and managements." Attendance at these meetings totaled 1,888—railroad officers, brotherhood leaders and selected committeemen. The Y. M. C. A. conducted a conference for younger railroad men at Detroit in November. This was attended by 279 delegates, representing 48 railroads and 58 occupations. Similar conferences are planned for the current year.

## Virginian Electrification Progress

Fifteen miles of the overhead catenary construction has been completed on the section of the Virginian which is to be electrified, and the first boiler in the power plant will be fired within a few weeks. The power plant which is located on the New River at Narrows, Va., will be a pulverized coal burning plant and will be equipped with five 1,521 b.h.p. boilers and four 15,000 kw. turbine generator sets.

The first of the locomotives will probably be delivered about June 1, and the remainder at intervals of about six weeks. They will be delivered as 10 three-unit locomotives and the first locomotives received will be placed in service before all of the overhead work is completed. The western end of the division will be electrically operated first and if present plans can be worked out on schedule, electric trains will be run into Roanoke, Va., the eastern end of the division, by November.

## Cost of Railroad Fires

The Railroad Insurance Association, C. N. Rambo, manager, 80 Maiden Lane, New York City, has issued a statement classifying the causes of the fire losses which it paid in the year 1924; a total of $2,673,230 on 1,764 fires. The statement is sent to railroad officers with the suggestion that a perusal of the different causes may suggest preventive measures which ought to be taken.

The causes are listed under ten heads, as follows: A—Lighting, $20,426; B—Heating, $127,579; C—Power, $52,199; D—Sparks, $617,560; E—Pronounced Carelessness, $306,664; F—Outside Causes, $334,173; G—Oils, Paints, etc., $41,254; H—Electrical, $261,320; K—Miscellaneous, $369,718; L—Unknown, $542,337.

Among some of the larger items are: (C) Overheated bearings, $42,269; (D) Sparks or flame from acetylene torch, 27 fires, $252,689; (E) Careless smokers, 78 fires, $226,899; Cigarettes, 11 fires, $37,621; (G) Ignition of gasoline, 6 fires, $27,466; (H) Overheated motor, one fire, $135,586; (K) Collisions and derailments (31), $156,122.

## Decision in the Burlington Fraudulent Injury Cases

The attempt of the Chicago, Burlington & Quincy to expose fraudulent personal injury suits against railways in the district court at Chicago on February 13, described in the *Railway Age* of March 14, resulted in a favorable opinion on March 30 when Circuit Judge Harry M. Fisher rendered a decision. The written opinion recommends disbarment as a fitting punishment for Attorney William W. McCallum for pressing fake personal injury damage suits against the Burlington and held McCallum and his brother guilty of contempt of court and imposed a fine of $500 on each. D. J. Scanlon, alias Donahue, employed by the Burlington, who feigned paralysis, was sentenced to 60 days in jail for contempt of court. The three examining physicians were reprimanded for their carelessness. Attorney W. Kirkland, counsel for the Burlington, John L. Fogel, chairman of the Bar Association grievance committee, who acted as a friend of the court and Attorney John A. Bloomingston, representing McCallum, were commended by the judge for their services during the investigation. On March 31 the ruling was revised and the fine of Attorney McCallum reduced to $100, that of his brother to $200 and Donahue was ordered to pay a fine of $500 and serve one day in the county jail.

## Accident Report for 1924

The Interstate Commerce Commission has issued a preliminary memorandum showing the total number of railroad accidents in the United States in the 12 months ending with December, 1924, the statement being marked "subject to revision." (The full report for 1923 appeared in the *Railway Age* of November 8, 1924; and that for 1922 in the issue of September 29, 1923.)

The present report shows the total number of passengers killed in train accidents as 41, which is less than the total shown in the remarkably low record of 1923. The total number of persons killed, all classes, in train accidents (367) is also decidedly lower than in the year preceding; and corresponding decreases are shown in nearly every item of the table. The falling off in casualties is in part accounted for by the smaller volume of business. The number of locomotive miles (millions) in 1924 was 1,725.8; in the year preceding 1,813.2; and the number of man-hours reported by the class I roads was (millions) 4,472 as compared with 4,856 in 1923.

Following are the principal totals in the table:

| | 1924 | | 1923 | |
|---|---|---|---|---|
| In Train Accidents | Killed | Injured | Killed | Injured |
| Passengers | 41 | 2,125 | 42 | 2,662 |
| Employees | 216 | 1,477 | 275 | 1,939 |
| Other persons | 110 | 384 | 95 | 557 |
| Total | 367 | 3,986 | 412 | 5,158 |
| In Train Service Accidents | | | | |
| Passengers | 108 | 3,229 | 96 | 3,185 |
| Employees | 976 | 30,697 | 1,288 | 37,537 |
| Other persons | 4,764 | 10,459 | 5,126 | 10,584 |
| Total | 5,848 | 44,385 | 6,510 | 51,306 |
| Train and train service accidents | 6,215 | 48,371 | 6,922 | 56,464 |
| Non-train accidents, all classes of persons | 402 | 95,368 | 463 | 115,248 |
| Grand total | 6,617 | 143,739 | 7,385 | 171,712 |

The total number of persons killed at highway grade crossings in 1924 (included above) was 2,149; injured 6,525; and in 1923, killed 2,268; injured 6,314.

## The Canadian Railways in February

The report of earnings and expenses of the Canadian Pacific for the month of February, issued last Saturday, shows the more than usual seasonal increase in net earnings, which were not only higher than for the same month last year but also highest for any February since 1918. The showing in comparison with the same month last year was made possible through the putting into effect of operating economies, the decrease in operating expenses more than offsetting a decline in gross earnings. Operating expenses were the lowest for any February since 1919. While more than $1,250,000 below February, 1924, gross earnings were higher than in February, 1922, or 1923. The Canadian Pacific started this year with a decrease of $276,630. The increase in net shown for February leaves that railway only $199,779 behind its 1924 figures for the first two months of the year.

Following are the gross earnings, operating expenses and net profits for the month of February and for the two months:

| February | 1925 | 1924 | Decrease |
|---|---|---|---|
| Gross earnings | $11,786,710 | $13,083,123 | $1,296,412 |
| Operating expenses | 10,632,009 | 12,005,273 | 1,373,263 |
| Net profit | $1,154,700 | $1,007,849 | *$76,851 |
| Two months | 1925 | 1924 | Decrease |
| Gross earnings | $23,683,223 | $26,475,555 | $2,792,331 |
| Operating expenses | 21,944,754 | 24,537,305 | 2,592,551 |
| Net | $1,738,469 | $1,938,249 | $199,779 |

*Increase.

Operating results of the Canadian National Railways for the month of February this year show that while there was a decrease in gross earnings of $1,298,476, or 7.3 per cent, the operating expenses during the month were reduced by $2,097,241, or 11.7 per cent, with the result that the net earnings for the month were $611,724, as compared with a deficit of $187,041 in the same month last year, an improvement in the net earnings for the month, as compared with February last year, of $798,765.

The figures giving the results of operations for the first two months of 1925 show that although there was a falling off in gross receipts of $2,910,499, or 8.1 per cent, operating expenses were reduced by $3,532,649 or 9.9 per cent, with the result that the net earnings for January and February, 1925, amounted to $884,526 as compared with $262,376 during the corresponding period of last year. The increase in net earnings for the first two months of this year is therefore $622,150 or 237.1 per cent as compared with the first two months of 1924.

Gross earnings, operating expenses and net earnings for the month of February and for the two months' period in both years are as follows:

| February | 1925 | 1924 | Inc. |
|---|---|---|---|
| Gross | $16,486,042 | $17,784,518 | *$1,298,476 |
| Operating expenses | 15,874,318 | 17,971,559 | *2,097,241 |
| Net | 611,724 | †187,041 | ‡798,765 |
| Two months— | | | |
| Gross | 33,202,510 | 36,113,009 | *2,910,499 |
| Operating expenses | 32,317,984 | 35,850,633 | *3.532,649 |
| Net | 884,526 | 262,376 | 622,150 |

*Decrease. †Deficit. ‡Improvement.

## Net Operating Income for February $64,910,210

Class I railroads, having a total mileage of 236,637 miles, had gross operating revenues in February totaling $454,996,100, according to reports for the month compiled by the Bureau of Railway Economics. This was a decrease of $24,457,860 or 5.1 per cent as compared with the same month last year. Operating expenses totaled $355,554,750, a reduction of $19,361,350 or 5.2 per cent, and the net operating income was $64,910,210, as compared with $71,605,570 in February last year, or a decrease of $6,695,360.

Class I railroads for the first two months this year had a net operating income of $130,745,960, which was at the annual rate of return of 4.76 per cent on their property investment, as compared with $123,009,840, or 4.62 per cent, for the same period last year.

Earnings by districts for the first two months this year with the percentage of return based on property investment on an annual basis were as follows:

| | | |
|---|---|---|
| New England Region | $5,235,064 | 5.58 per cent |
| Great Lakes Region | 22,612,130 | 5.40 per cent |
| Central Eastern Region | 25,789,918 | 4.92 per cent |
| Pocahontas Region | 9,588,090 | 7.48 per cent |
| Total Eastern District | 63,225,202 | 5.43 per cent |
| Total Southern District | 24,973,275 | 5.67 per cent |
| Northwestern Region | 8,189,447 | 2.63 per cent |
| Central Western Region | 20,892,793 | 3.96 per cent |
| Southwestern Region | 13,465,249 | 4.41 per cent |
| Total Western District | 42,547,489 | 3.72 per cent |

Twenty-seven Class I carriers operated at a loss in February, of which nine were in the Eastern, two in the Southern and sixteen in the Western districts. In January the same number of roads had operating deficits.

Maintenance expenditures in February amounted to $156,415,475, a decrease of approximately $5,000,000 or three per cent as compared with February, 1924. Maintenance of way expenditures totaled $54,923,943, an increase of $504,000. Expenditures for maintenance of equipment totaled $101,491,536, a decrease of $5,514,000.

Carriers in the Eastern district had a net operating income in February of $32,275,550, as compared with $33,483,150 in February last year. Freight traffic in the Eastern district in February, according to incomplete returns, was about six per cent under that of the corresponding period last year. Gross operating revenues of the Eastern carriers totaled $227,726,880, a decrease of 5.4 per cent. Operating expenses totaled $180,611,170, a decrease of 6 per cent. Class I carriers in the Eastern district during the first two months this year had a net operating income amounting to $63,225,200, compared with $58,009,500 during the corresponding period last year.

Class I carriers in the Southern district in February had a net operating income of $13,511,650, as compared with $14,037,720 in February last year. Freight traffic on the Southern roads in February was about seven per cent under that of the same month last year. Gross operating revenues of the Southern carriers in February totaled $66,915,000, a decrease of 1.7 per cent, while operating expenses totaled $48,426,540, a decrease of 2.8 per cent. The net operating income for the Class I roads in the Southern district for the first two months this year was $24,973,275, as compared with $24,165,500 during the same period last year.

Carriers in the Western district had a net operating income in February of $19,123,000, as compared with $24,084,700 for the same month last year. Freight traffic in the Western district showed a decrease of approximately 7.5 per cent. Gross operating revenues of the Western carriers totaled $160,354,125, a decrease of 6.1 per cent, while operating expenses totaled $126,517,000, a decrease of 4.9 per cent. Class I carriers in the Western district during the first two months this year had a net operating income of $42,547,490 as compared with $40,834,835 during the same period one year ago.

# Freight Operating Statistics of Large Steam Roads—Selected Items for January, 1925,

| Region, road and year | Average miles of road operated | Train-miles | Locomotive-miles: Principal and helper | Locomotive-miles: Light | Car-miles: Loaded (thousands) | Car-miles: Per cent loaded | Ton-miles (thousands): Gross, Excluding locomotive and tender | Ton-miles (thousands): Net, Revenue and non-revenue | Average number of locomotives on line daily: Serviceable | Unserviceable | Per cent unserviceable | Stored |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **New England Region:** | | | | | | | | | | | | |
| Boston & Albany | 1925 | 394 | 270,445 | 288,904 | 30,509 | 4,806 | 69.4 | 241,961 | 94,213 | 128 | 17 | 11.7 | ... |
| | 1924 | 394 | 266,758 | 285,169 | 29,719 | 4,901 | 68.4 | 249,465 | 98,294 | 122 | 22 | 15.4 | ... |
| Boston & Maine | 1925 | 2,348 | 500,268 | 573,100 | 53,927 | 11,402 | 71.4 | 565,163 | 230,598 | 329 | 123 | 27.2 | 43 |
| | 1924 | 2,366 | 521,800 | 572,640 | 44,803 | 11,105 | 69.9 | 564,462 | 229,753 | 350 | 120 | 25.6 | 47 |
| N. Y., New H. & Hartf | 1925 | 1,931 | 478,371 | 500,754 | 32,081 | 11,678 | 71.1 | 579,121 | 239,194 | 294 | 73 | 19.8 | 18 |
| | 1924 | 1,974 | 485,328 | 509,745 | 31,018 | 11,456 | 70.6 | 573,446 | 241,234 | 285 | 83 | 22.6 | 7 |
| **Great Lakes Region:** | | | | | | | | | | | | | |
| Delaware & Hudson | 1925 | 888 | 369,762 | 497,362 | 45,042 | 9,185 | 65.9 | 585,468 | 297,502 | 241 | 39 | 13.8 | 67 |
| | 1924 | 887 | 360,194 | 504,609 | 47,711 | 9,248 | 64.3 | 594,732 | 296,094 | 255 | 38 | 13.0 | 61 |
| Del., Lack. & Western | 1925 | 993 | 547,545 | 662,483 | 98,449 | 15,509 | 71.0 | 889,352 | 414,130 | 287 | 69 | 19.5 | 8 |
| | 1924 | 993 | 528,615 | 652,805 | 100,332 | 15,601 | 67.3 | 865,296 | 385,770 | 274 | 82 | 23.0 | 6 |
| Erie (inc. Chi. & Erie) | 1925 | 2,325 | 904,059 | 1,003,897 | 103,434 | 30,642 | 68.0 | 1,801,644 | 830,681 | 658 | 95 | 12.6 | 177 |
| | 1924 | 2,325 | 997,457 | 1,140,432 | 74,679 | 32,063 | 66.9 | 1,938,393 | 881,951 | 662 | 127 | 16.1 | 157 |
| Lehigh Valley | 1925 | 1,357 | 549,979 | 610,582 | 72,286 | 15,322 | 65.8 | 909,236 | 416,334 | 469 | 50 | 9.7 | 102 |
| | 1924 | 1,356 | 607,172 | 672,913 | 82,752 | 15,905 | 64.7 | 952,943 | 443,240 | 434 | 100 | 18.7 | 61 |
| Michigan Central | 1925 | 1,826 | 602,677 | 617,530 | 20,511 | 17,928 | 62.2 | 983,824 | 363,661 | 300 | 67 | 18.2 | 77 |
| | 1924 | 1,827 | 622,203 | 637,518 | 21,499 | 18,564 | 64.9 | 985,726 | 376,542 | 329 | 51 | 13.3 | 61 |
| New York Central | 1925 | 6,447 | 2,174,663 | 2,464,464 | 184,658 | 71,836 | 62.9 | 4,414,098 | 1,971,327 | 1,151 | 421 | 26.8 | 222 |
| | 1924 | 6,447 | 2,272,442 | 2,558,057 | 175,709 | 72,157 | 61.5 | 4,437,026 | 1,939,762 | 1,274 | 397 | 23.7 | 341 |
| New York, Chi. & St. L. | 1925 | 1,669 | 743,792 | 755,105 | 5,841 | 20,784 | 65.1 | 1,161,964 | 475,770 | 251 | 68 | 21.2 | 40 |
| | 1924 | 1,669 | 750,701 | 759,833 | 4,195 | 19,081 | 65.2 | 1,049,947 | 424,026 | 247 | 66 | 21.0 | 21 |
| Pere Marquette | 1925 | 2,200 | 398,536 | 409,160 | 7,087 | 9,424 | 63.7 | 559,936 | 263,891 | 189 | 28 | 12.9 | 22 |
| | 1924 | 2,227 | 391,515 | 412,483 | 8,985 | 8,939 | 65.5 | 518,114 | 234,791 | 190 | 25 | 11.7 | 18 |
| Pitts. & Lake Erie | 1925 | 231 | 149,026 | 153,437 | 2,005 | 4,887 | 60.0 | 375,617 | 213,441 | 61 | 18 | 23.2 | 4 |
| | 1924 | 231 | 151,865 | 158,182 | 1,433 | 4,755 | 60.3 | 362,779 | 207,903 | 68 | 14 | 17.2 | 16 |
| Wabash | 1925 | 2,497 | 724,889 | 767,140 | 12,555 | 20,567 | 68.2 | 1,162,565 | 507,818 | 291 | 57 | 16.3 | 16 |
| | 1924 | 2,459 | 698,099 | 742,020 | 15,169 | 18,735 | 70.3 | 1,016,703 | 436,903 | 309 | 51 | 14.3 | 6 |
| **Central Eastern Region:** | | | | | | | | | | | | | |
| Baltimore & Ohio | 1925 | 5,196 | 1,892,445 | 2,206,808 | 168,808 | 50,428 | 63.4 | 3,216,984 | 1,550,530 | 942 | 324 | 25.6 | 61 |
| | 1924 | 5,207 | 1,999,351 | 2,294,585 | 173,895 | 50,891 | 63.4 | 3,200,631 | 1,560,010 | 1,062 | 219 | 17.1 | 111 |
| Central of New Jersey | 1925 | 692 | 279,219 | 308,974 | 40,556 | 6,229 | 58.4 | 428,797 | 205,173 | 232 | 41 | 15.0 | 30 |
| | 1924 | 693 | 290,067 | 318,879 | 41,214 | 6,434 | 58.9 | 437,980 | 211,800 | 238 | 41 | 14.7 | 30 |
| Chicago & Eastern Ill. | 1925 | 945 | 297,319 | 306,765 | 4,941 | 7,492 | 61.0 | 482,724 | 238,711 | 121 | 33 | 21.4 | 19 |
| | 1924 | 945 | 306,479 | 318,033 | 4,473 | 7,298 | 62.6 | 468,712 | 241,123 | 124 | 49 | 28.2 | 18 |
| Clev., Cin., Chi. & St. L. | 1925 | 2,376 | 858,497 | 924,482 | 18,524 | 24,023 | 58.9 | 1,644,957 | 783,980 | 359 | 81 | 18.5 | 14 |
| | 1924 | 2,376 | 787,689 | 825,560 | 13,523 | 21,256 | 61.7 | 1,400,103 | 686,688 | 337 | 96 | 22.1 | 37 |
| Elgin, Joliet & Eastern[1] | 1925 | 460 | 146,650 | 163,633 | 7,832 | 4,223 | 63.8 | 327,974 | 176,339 | 61 | 14 | 14.5 | ... |
| | 1924 | 460 | 131,984 | 148,513 | 10,169 | 3,619 | 65.9 | 278,417 | 149,693 | 98 | 13 | 11.5 | 21 |
| Long Island | 1925 | 393 | 43,065 | 47,609 | 10,872 | 490 | 59.3 | 30,460 | 11,708 | 42 | 11 | 21.3 | 4 |
| | 1924 | 393 | 43,209 | 52,238 | 7,685 | 532 | 60.5 | 31,337 | 11,950 | 40 | 13 | 24.9 | 2 |
| Pennsylvania System | 1925 | 10,930 | 4,681,802 | 5,092,527 | 390,715 | 121,654 | 63.6 | 8,130,483 | 3,925,404 | 2,561 | 907 | 26.2 | 44 |
| | 1924 | 10,900 | 4,439,630 | 4,839,299 | 362,149 | 111,814 | 64.4 | 7,417,838 | 3,623,309 | 2,741 | 727 | 20.9 | 284 |
| Reading | 1925 | 1,130 | 717,044 | 789,340 | 76,159 | 15,898 | 60.7 | 1,110,563 | 574,292 | 392 | 79 | 16.8 | 54 |
| | 1924 | 1,142 | 691,527 | 764,576 | 75,576 | 15,645 | 59.9 | 1,082,935 | 548,491 | 389 | 84 | 17.8 | 86 |
| **Pocohontas Region:** | | | | | | | | | | | | | |
| Chesapeake & Ohio | 1925 | 2,598 | 1,183,731 | 1,250,919 | 38,225 | 34,018 | 57.3 | 2,646,766 | 1,448,500 | 482 | 115 | 19.2 | 14 |
| | 1924 | 2,553 | 998,999 | 1,100,564 | 32,253 | 27,024 | 57.5 | 2,100,206 | 1,147,310 | 425 | 98 | 18.7 | 17 |
| Norfolk & Western | 1925 | 2,230 | 934,070 | 1,122,425 | 34,222 | 26,629 | 58.3 | 2,232,001 | 1,204,599 | 574 | 97 | 14.4 | 118 |
| | 1924 | 2,231 | 893,611 | 1,094,491 | 36,225 | 24,203 | 59.5 | 1,948,952 | 1,053,043 | 561 | 118 | 17.4 | 87 |
| **Southern Region:** | | | | | | | | | | | | | |
| Atlantic Coast Line | 1925 | 4,869 | 802,245 | 820,981 | 15,043 | 18,922 | 63.2 | 991,559 | 382,548 | 388 | 49 | 11.2 | 38 |
| | 1924 | 4,869 | 812,598 | 817,629 | 13,795 | 18,877 | 64.1 | 981,486 | 380,980 | 365 | 63 | 14.7 | 27 |
| Central of Georgia | 1925 | 1,907 | 297,725 | 298,618 | 4,869 | 6,274 | 74.2 | 326,588 | 145,523 | 135 | 21 | 13.6 | 22 |
| | 1924 | 1,907 | 299,661 | 301,788 | 4,539 | 6,220 | 71.6 | 325,363 | 144,962 | 127 | 20 | 13.4 | 5 |
| I. C. (inc. Y. & M. V.) | 1925 | 6,225 | 1,898,334 | 1,924,807 | 44,338 | 51,686 | 62.6 | 3,285,053 | 1,462,176 | 774 | 100 | 11.5 | 21 |
| | 1924 | 6,197 | 2,065,280 | 2,081,742 | 47,299 | 51,223 | 62.5 | 3,320,701 | 1,532,102 | 800 | 112 | 12.3 | 18 |
| Louisville & Nashville | 1925 | 5,027 | 1,840,426 | 1,988,020 | 76,054 | 34,743 | 61.6 | 2,338,921 | 1,149,468 | 607 | 94 | 13.4 | 3 |
| | 1924 | 5,026 | 1,737,569 | 1,857,976 | 70,465 | 30,584 | 63.7 | 1,980,590 | 975,220 | 590 | 120 | 16.9 | 9 |
| Seaboard Air Line | 1925 | 3,551 | 528,094 | 537,892 | 10,758 | 12,053 | 65.9 | 665,729 | 257,449 | 221 | 37 | 14.3 | ... |
| | 1924 | 3,548 | 555,271 | 564,184 | 8,378 | 12,159 | 64.2 | 677,614 | 255,131 | 216 | 43 | 16.5 | ... |
| Southern Ry | 1925 | 6,840 | 1,464,155 | 1,502,379 | 33,957 | 32,589 | 65.5 | 1,812,105 | 733,112 | 853 | 126 | 12.9 | 15 |
| | 1924 | 6,820 | 1,429,785 | 1,466,783 | 32,735 | 31,592 | 67.8 | 1,677,879 | 716,568 | 846 | 124 | 12.8 | 1 |
| **Northwestern Region:** | | | | | | | | | | | | | |
| Chi. & North Western | 1925 | 8,463 | 1,589,406 | 1,640,257 | 33,567 | 33,962 | 63.0 | 1,957,792 | 825,195 | 743 | 267 | 26.4 | 50 |
| | 1924 | 8,463 | 1,707,169 | 1,782,088 | 23,630 | 33,886 | 63.7 | 1,965,892 | 841,950 | 884 | 198 | 18.3 | 51 |
| Chi., Milw. & St. P. | 1925 | 11,201 | 1,752,519 | 1,851,783 | 82,743 | 44,624 | 64.7 | 2,617,897 | 1,188,956 | 963 | 153 | 13.7 | 95 |
| | 1924 | 10,987 | 1,786,670 | 1,852,069 | 73,906 | 40,124 | 65.7 | 2,300,293 | 1,049,645 | 949 | 167 | 14.9 | 97 |
| Chi., St.P., Minn. & Om | 1925 | 1,726 | 374,093 | 399,181 | 17,874 | 6,765 | 64.3 | 387,931 | 170,630 | 163 | 38 | 18.8 | 1 |
| | 1924 | 1,726 | 354,014 | 379,334 | 18,157 | 6,037 | 68.3 | 334,683 | 144,641 | 161 | 41 | 20.2 | 4 |
| Great Northern | 1925 | 8,251 | 822,070 | 845,645 | 40,358 | 23,059 | 70.4 | 1,295,910 | 621,793 | 626 | 153 | 19.6 | 126 |
| | 1924 | 8,251 | 787,823 | 826,655 | 48,084 | 20,628 | 73.6 | 1,123,033 | 533,957 | 612 | 156 | 20.3 | 155 |
| Minn., St.P. & S. Ste. M. | 1925 | 4,375 | 561,243 | 574,694 | 7,034 | 12,660 | 72.0 | 656,898 | 308,480 | 302 | 40 | 11.6 | 23 |
| | 1924 | 4,374 | 518,350 | 531,732 | 6,361 | 10,916 | 70.0 | 562,305 | 256,685 | 284 | 60 | 17.3 | 18 |
| Northern Pacific | 1925 | 6,440 | 836,712 | 879,278 | 51,216 | 23,464 | 70.3 | 1,379,398 | 619,482 | 546 | 157 | 22.3 | 99 |
| | 1924 | 6,415 | 816,227 | 856,301 | 47,472 | 22,073 | 74.7 | 1,219,569 | 583,961 | 559 | 163 | 22.5 | 90 |
| Oreg.-Wash. R. R. & Nav. | 1925 | 2,181 | 187,694 | 202,708 | 19,871 | 5,209 | 71.6 | 295,901 | 138,564 | 140 | 21 | 13.1 | 11 |
| | 1924 | 2,180 | 207,398 | 219,391 | 22,123 | 5,046 | 70.9 | 293,001 | 138,425 | 147 | 22 | 13.1 | 16 |
| **Central Western Region:** | | | | | | | | | | | | | |
| Atch., Top. & S. Fe (inc. P. & S. F.) | 1925 | 10,037 | 1,626,359 | 1,731,831 | 88,122 | 45,757 | 64.5 | 2,662,729 | 1,028,541 | 817 | 195 | 19.2 | 198 |
| | 1924 | 9,855 | 1,487,426 | 1,569,885 | 78,724 | 39,774 | 64.9 | 2,263,099 | 848,467 | 808 | 160 | 16.6 | 200 |
| Chicago & Alton | 1925 | 1,022 | 344,973 | 376,965 | 5,721 | 7,897 | 62.0 | 482,988 | 207,165 | 119 | 26 | 17.8 | 6 |
| | 1924 | 1,010 | 353,008 | 361,159 | 6,269 | 7,440 | 63.0 | 459,342 | 193,575 | 125 | 28 | 18.2 | 16 |
| Chi., Burl. & Quincy | 1925 | 9,326 | 1,765,375 | 1,844,468 | 76,160 | 46,576 | 61.7 | 2,910,126 | 1,366,852 | 830 | 182 | 18.0 | 18 |
| | 1924 | 9,335 | 1,817,449 | 1,899,469 | 80,799 | 44,663 | 62.7 | 2,765,237 | 1,307,930 | 807 | 215 | 21.0 | 15 |
| Chi., Rock I. & Pacific | 1925 | 7,578 | 1,453,035 | 1,485,569 | 13,788 | 32,611 | 66.3 | 1,783,123 | 751,074 | 558 | 164 | 22.7 | 37 |
| | 1924 | 7,635 | 1,456,816 | 1,490,358 | 18,335 | 29,807 | 66.3 | 1,626,849 | 676,770 | 508 | 223 | 30.5 | 37 |
| Denver & R. G. Wn. | 1925 | 2,567 | 271,132 | 334,402 | 66,659 | 6,102 | 65.3 | 377,202 | 180,019 | 244 | 58 | 19.1 | 37 |
| | 1924 | 2,599 | 275,191 | 342,574 | 59,981 | 5,717 | 65.9 | 352,101 | 170,361 | 232 | 92 | 28.4 | 42 |
| Oregon Short Line | 1925 | 2,414 | 328,701 | 346,457 | 23,487 | 8,211 | 67.9 | 506,404 | 241,784 | 195 | 32 | 14.1 | 50 |
| | 1924 | 2,365 | 364,939 | 385,847 | 28,722 | 8,447 | 68.9 | 517,198 | 248,768 | 210 | 26 | 11.0 | 60 |
| S. P. (Pacific System) | 1925 | 8,517 | 1,300,690 | 1,426,021 | 219,980 | 37,091 | 65.3 | 2,237,152 | 939,041 | 686 | 255 | 27.1 | 95 |
| | 1924 | 8,458 | 1,332,077 | 1,477,184 | 230,048 | 35,958 | 65.6 | 2,130,350 | 865,782 | 682 | 217 | 24.1 | 58 |
| Union Pacific | 1925 | 3,688 | 837,044 | 856,660 | 43,763 | 27,442 | 71.5 | 1,491,739 | 649,340 | 490 | 64 | 11.5 | 153 |
| | 1924 | 3,715 | 954,013 | 973,455 | 45,590 | 28,118 | 72.5 | 1,535,442 | 686,425 | 468 | 74 | 13.6 | 124 |
| **Southwestern Region:** | | | | | | | | | | | | | |
| Gulf, Colo. & S. Fe | 1925 | 1,897 | 281,730 | 292,946 | 6,438 | 8,142 | 63.9 | 476,292 | 202,785 | 113 | 25 | 18.2 | 5 |
| | 1924 | 1,897 | 248,926 | 258,346 | 6,408 | 7,082 | 68.6 | 400,445 | 181,181 | 127 | 25 | 16.3 | 19 |
| Mo.-Kans.-Tex | 1925 | 1,787 | 253,275 | 253,732 | 6,926 | 8,173 | 62.1 | 473,239 | 188,977 | 115 | 33 | 22.1 | 36 |
| | 1924 | 1,801 | 250,263 | 250,359 | 5,127 | 7,489 | 63.1 | 420,826 | 169,702 | 147 | 54 | 26.7 | 67 |
| Mo.-Kans.-Tex. of Tex. | 1925 | 1,389 | 213,295 | 223,243 | 5,393 | 5,283 | 59.8 | 306,111 | 115,375 | 111 | 26 | 19.1 | 31 |
| | 1924 | 1,389 | 193,978 | 198,970 | 2,489 | 4,491 | 64.0 | 253,645 | 100,618 | 106 | 23 | 17.6 | 30 |
| Missouri Pacific | 1925 | 7,277 | 1,482,223 | 1,519,809 | 50,151 | 37,195 | 64.6 | 2,210,177 | 990,759 | 533 | 100 | 15.8 | ... |
| | 1924 | 7,305 | 1,265,741 | 1,275,393 | 41,357 | 31,230 | 68.7 | 1,785,703 | 827,254 | 443 | 168 | 27.5 | 2 |
| St. Louis-San Francisco | 1925 | 4,683 | 906,624 | 924,812 | 18,503 | 18,590 | 62.5 | 1,085,797 | 454,908 | 419 | 70 | 14.3 | 22 |
| | 1924 | 4,683 | 832,475 | 844,860 | 15,872 | 15,578 | 65.1 | 888,462 | 379,928 | 435 | 72 | 14.2 | 33 |
| Southern Pacific Lines (in Tex. and La.)[2] | 1925 | 3,756 | 644,858 | 645,120 | 4,429 | 14,374 | 62.5 | 868,048 | 363,941 | 218 | 65 | 22.9 | 15 |
| | 1924 | 3,710 | 660,685 | 662,785 | 4,302 | 13,870 | 65.7 | 812,947 | 350,278 | 235 | 57 | 19.4 | 17 |
| Texas & Pacific | 1925 | 1,953 | 316,742 | 316,742 | 2,271 | 7,734 | 64.5 | 430,898 | 163,643 | 149 | 45 | 23.0 | 17 |
| | 1924 | 1,953 | 315,586 | 315,586 | 3,014 | 7,401 | 67.3 | 400,213 | 158,027 | 164 | 37 | 18.2 | 17 |

[1] No passenger-train service. [2] Includes Franklin & Abbeville, Galveston, Harrisburg & San Antonio, Houston & Shreveport, Houston & Texas Central, Houston East & West Texas, Iberia & Vermillion, Lake Charles & Northern, Louisiana Western, Morgan's La. & Tex. R. R. & S. S. Co., and Texas & New Orleans.

## Compared with January, 1924, for Roads with Annual Operating Revenues above $25,000,000.

| Region, road and year | Average number of freight cars on line daily: Home | Foreign | Total | Per cent unserviceable | Stored | Gross tons per train, excluding locomotive and tender | Net tons per train | Net tons per loaded car | Net ton-miles per car-day | Car miles per car-day | Net ton-miles per mile of road per day | Pounds of coal per 1,000 gross ton-miles including locomotive and tender | Locomotive miles per locomotive day |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New England Region: | | | | | | | | | | | | | |
| Boston & Albany....1925 | 2,741 | 5,875 | 8,616 | 2.6 | 197 | 895 | 348 | 19.6 | 352 | 25.9 | 7,715 | 228 | 71.2 |
| 1924 | 2,038 | 5,320 | 7,358 | 3.6 | .... | 935 | 368 | 20.1 | 431 | 31.4 | 8,049 | 215 | 70.2 |
| Boston & Maine....1925 | 13,810 | 14,176 | 27,986 | 9.1 | .... | 1,130 | 461 | 20.2 | 266 | 18.4 | 3,168 | 174 | 44.8 |
| 1924 | 14,390 | 15,624 | 30,014 | 12.1 | .... | 1,082 | 440 | 20.7 | 247 | 17.0 | 3,133 | 179 | 42.3 |
| N. Y., New H. & Hartf....1925 | 19,086 | 17,952 | 37,038 | 21.9 | 883 | 1,211 | 500 | 20.5 | 208 | 14.3 | 3,996 | 171 | 46.9 |
| 1924 | 20,394 | 15,665 | 36,059 | 20.5 | .... | 1,182 | 497 | 21.1 | 216 | 14.5 | 3,942 | 178 | 47.4 |
| Great Lakes Region: | | | | | | | | | | | | | |
| Delaware & Hudson.....1925 | 8,392 | 5,888 | 14,280 | 5.9 | .... | 1,583 | 805 | 32.4 | 671 | 31.4 | 10,808 | 205 | 62.5 |
| 1924 | 9,542 | 5,525 | 15,067 | 6.3 | .... | 1,651 | 822 | 32.0 | 633 | 30.7 | 10,763 | 223 | 60.8 |
| Del., Lack. & Western....1925 | 16,765 | 8,166 | 24,930 | 4.9 | 37 | 1,624 | 756 | 26.2 | 536 | 28.8 | 13,459 | 201 | 68.9 |
| 1924 | 16,444 | 8,008 | 24,452 | 4.1 | 419 | 1,637 | 730 | 24.7 | 509 | 30.6 | 12,531 | 208 | 68.4 |
| Erie (inc. Chi. & Erie)....1925 | 37,804 | 20,094 | 57,898 | 6.6 | 14,414 | 1,993 | 919 | 27.1 | 463 | 25.1 | 11,523 | 154 | 47.4 |
| 1924 | 33,578 | 18,810 | 52,388 | 6.3 | 9,964 | 1,943 | 884 | 27.5 | 543 | 29.5 | 12,238 | 156 | 49.7 |
| Lehigh Valley .....1925 | 23,293 | 10,393 | 33,686 | 6.7 | 275 | 1,653 | 757 | 27.2 | 399 | 22.3 | 9,900 | 187 | 42.4 |
| 1924 | 23,326 | 10,229 | 33,555 | 6.9 | 488 | 1,569 | 730 | 27.9 | 426 | 23.6 | 10,545 | 190 | 45.6 |
| Michigan Central .....1925 | 14,994 | 16,227 | 31,221 | 5.7 | 1,786 | 1,632 | 603 | 20.3 | 376 | 29.8 | 6,425 | 142 | 56.2 |
| 1924 | 13,532 | 16,682 | 30,214 | 6.2 | 3,633 | 1,584 | 605 | 20.3 | 402 | 30.5 | 6,650 | 158 | 55.9 |
| New York Central.....1925 | 71,488 | 67,698 | 139,186 | 3.6 | 20,650 | 2,030 | 906 | 27.4 | 456 | 26.5 | 9,864 | 151 | 54.3 |
| 1924 | 66,013 | 79,189 | 145,202 | 4.5 | 19,602 | 1,953 | 854 | 26.9 | 431 | 26.1 | 9,706 | 146 | 52.8 |
| New York, Chi. & St. L...1925 | 10,617 | 10,552 | 21,169 | 5.9 | 2,675 | 1,562 | 640 | 22.9 | 724 | 48.6 | 9,197 | 144 | 77.2 |
| 1924 | 10,351 | 12,570 | 22,921 | 4.8 | 2,500 | 1,399 | 565 | 23.2 | 596 | 41.1 | 8,193 | 163 | 78.7 |
| Pere Marquette .....1925 | 9,739 | 9,169 | 18,908 | 6.9 | 1,340 | 1,405 | 662 | 28.0 | 450 | 25.2 | 3,869 | 138 | 62.0 |
| 1924 | 9,729 | 11,628 | 21,357 | 3.3 | 1,696 | 1,323 | 600 | 26.3 | 354 | 20.6 | 3,401 | 160 | 63.2 |
| Pitts. & Lake Erie.....1925 | 13,697 | 7,922 | 21,619 | 5.6 | 1,787 | 2,520 | 1,432 | 43.7 | 318 | 12.2 | 29,747 | 83 | 63.2 |
| 1924 | 11,924 | 9,284 | 21,208 | 4.3 | 968 | 2,389 | 1,369 | 43.7 | 316 | 12.0 | 29,006 | 89 | 63.2 |
| Wabash .....1925 | 13,418 | 11,903 | 25,321 | 2.7 | 800 | 1,604 | 701 | 24.7 | 646 | 38.4 | 6,560 | 161 | 72.4 |
| 1924 | 11,892 | 13,778 | 25,670 | 2.6 | 184 | 1,456 | 626 | 23.3 | 549 | 33.4 | 5,731 | 188 | 67.9 |
| Central Eastern Region: | | | | | | | | | | | | | |
| Baltimore & Ohio.....1925 | 70,042 | 32,400 | 102,442 | 11.2 | 4,420 | 1,700 | 819 | 30.7 | 488 | 25.0 | 9,626 | 193 | 60.5 |
| 1924 | 66,878 | 33,477 | 100,355 | 7.0 | 10,321 | 1,601 | 780 | 30.7 | 501 | 25.8 | 9,672 | 207 | 62.2 |
| Central of New Jersey.....1925 | 18,631 | 10,586 | 29,217 | 2.9 | 4,509 | 1,536 | 735 | 32.9 | 227 | 11.8 | 9,562 | 192 | 41.4 |
| 1924 | 17,739 | 11,121 | 28,860 | 6.4 | 1,977 | 1,510 | 730 | 32.9 | 237 | 12.2 | 9,853 | 207 | 41.6 |
| Chicago & Eastern Ill.....1925 | 13,978 | 4,531 | 18,509 | 23.5 | 1,793 | 1,624 | 893 | 31.9 | 414 | 21.3 | 8,147 | 170 | 65.5 |
| 1924 | 13,191 | 4,806 | 17,997 | 14.3 | 1,040 | 1,529 | 787 | 33.0 | 431 | 20.8 | 8,230 | 210 | 60.1 |
| Clev., Cin., Chi. & St. L..1925 | 15,100 | 20,097 | 35,197 | 4.3 | 2,127 | 1,916 | 913 | 32.6 | 688 | 37.0 | 10,642 | 140 | 69.0 |
| 1924 | 17,154 | 20,161 | 37,315 | 5.0 | 3,781 | 1,777 | 872 | 32.3 | 561 | 29.8 | 9,324 | 151 | 62.6 |
| Elgin, Joliet & Eastern[1]....1925 | 9,770 | 8,756 | 18,526 | 7.7 | 473 | 2,236 | 1,202 | 41.8 | 307 | 11.5 | 12,372 | 163 | 58.2 |
| 1924 | 10,222 | 6,907 | 17,129 | 5.7 | 655 | 2,109 | 1,134 | 41.4 | 282 | 10.3 | 10,504 | 161 | 46.0 |
| Long Island .....1925 | 1,878 | 4,072 | 5,950 | 0.8 | 268 | 708 | 277 | 23.9 | 63 | 4.5 | 960 | 364 | 35.5 |
| 1924 | 1,704 | 4,309 | 6,013 | 1.2 | .... | 725 | 277 | 22.5 | 64 | 4.7 | 980 | 380 | 36.2 |
| Pennsylvania System .....1925 | 212,789 | 88,468 | 301,257 | 10.0 | 37,292 | 1,737 | 838 | 32.3 | 420 | 20.5 | 11,585 | 159 | 51.0 |
| 1924 | 199,041 | 102,634 | 301,675 | 6.6 | 47,583 | 1,671 | 816 | 32.4 | 387 | 18.6 | 10,723 | 168 | 48.4 |
| Reading .....1925 | 24,041 | 15,151 | 39,192 | 2.1 | 3,464 | 1,549 | 801 | 36.1 | 473 | 21.5 | 16,396 | 196 | 59.3 |
| 1924 | 21,167 | 15,728 | 36,895 | 3.5 | .... | 1,566 | 793 | 35.1 | 480 | 22.8 | 15,488 | 197 | 57.2 |
| Pocohontas Region: | | | | | | | | | | | | | |
| Chesapeake & Ohio.....1925 | 28,425 | 11,368 | 39,793 | 4.0 | 1,360 | 2,236 | 1,224 | 42.6 | 1,174 | 48.1 | 17,982 | 130 | 69.7 |
| 1924 | 29,128 | 9,962 | 39,090 | 5.3 | 2,525 | 2,102 | 1,148 | 42.5 | 944 | 38.7 | 14,497 | 143 | 69.9 |
| Norfolk & Western.....1925 | 27,162 | 8,990 | 36,152 | 2.4 | 914 | 2,390 | 1,290 | 45.2 | 1,074 | 40.7 | 17,425 | 166 | 55.6 |
| 1924 | 25,723 | 9,127 | 34,850 | 3.8 | .... | 2,181 | 1,178 | 43.5 | 975 | 37.6 | 15,227 | 199 | 53.7 |
| Southern Region: | | | | | | | | | | | | | |
| Atlantic Coast Line.....1925 | 22,339 | 14,903 | 37,242 | 4.4 | .... | 1,236 | 477 | 20.2 | 327 | 25.7 | 2,534 | 138 | 61.7 |
| 1924 | 21,985 | 14,358 | 36,343 | 3.7 | .... | 1,208 | 469 | 20.2 | 338 | 26.1 | 2,524 | 140 | 62.6 |
| Central of Georgia.....1925 | 4,524 | 4,293 | 8,817 | 6.6 | .... | 1,097 | 492 | 23.4 | 535 | 30.9 | 2,479 | 166 | 62.8 |
| 1924 | 4,491 | 4,284 | 8,775 | 5.4 | .... | 1,086 | 484 | 23.3 | 533 | 31.9 | 2,452 | 178 | 67.7 |
| I. C. (inc. Y. & M. V.)..1925 | 42,094 | 21,489 | 63,583 | 4.0 | .... | 1,730 | 770 | 28.3 | 741 | 41.8 | 7,577 | 154 | 72.7 |
| 1924 | 43,256 | 23,226 | 66,482 | 3.9 | .... | 1,608 | 742 | 29.9 | 743 | 39.7 | 7,975 | 169 | 75.4 |
| Louisville & Nashville.....1925 | 41,365 | 20,116 | 61,481 | 9.3 | 99 | 1,271 | 625 | 33.1 | 603 | 29.6 | 7,376 | 182 | 95.1 |
| 1924 | 42,003 | 18,539 | 60,542 | 5.8 | 83 | 1,140 | 561 | 31.9 | 520 | 25.6 | 6,259 | 200 | 87.7 |
| Seaboard Air Line.....1925 | 11,923 | 9,432 | 21,355 | 3.9 | .... | 1,261 | 488 | 21.4 | 389 | 27.6 | 2,339 | 163 | 68.7 |
| 1924 | 10,458 | 9,301 | 19,759 | 4.8 | .... | 1,220 | 459 | 21.0 | 417 | 30.9 | 2,320 | 170 | 71.5 |
| Southern Ry.....1925 | 38,895 | 22,334 | 61,229 | 5.1 | .... | 1,238 | 501 | 22.5 | 385 | 26.2 | 3,458 | 188 | 50.6 |
| 1924 | 38,233 | 24,119 | 62,352 | 2.9 | .... | 1,174 | 501 | 22.7 | 371 | 24.1 | 3,389 | 211 | 49.9 |
| Northwestern Region: | | | | | | | | | | | | | |
| Chi. & North Western.....1925 | 47,360 | 30,080 | 77,440 | 10.3 | 6,050 | 1,232 | 519 | 24.3 | 343 | 22.4 | 3,145 | 172 | 53.5 |
| 1924 | 46,649 | 31,112 | 77,761 | 6.5 | 3,964 | 1,152 | 493 | 24.9 | 349 | 22.0 | 3,229 | 197 | 53.9 |
| Chi., Milw. & St. P.....1925 | 53,670 | 26,464 | 80,134 | 9.2 | .... | 1,494 | 678 | 26.6 | 478 | 27.7 | 3,424 | 176 | 56.0 |
| 1924 | 52,108 | 26,809 | 78,917 | 6.1 | .... | 1,287 | 587 | 26.2 | 428 | 24.9 | 3,082 | 198 | 55.7 |
| Chi., St.P., Minn. & Om...1925 | 3,880 | 10,861 | 14,741 | 11.7 | 502 | 1,037 | 456 | 25.2 | 373 | 23.0 | 3,189 | 175 | 66.8 |
| 1924 | 3,571 | 10,422 | 13,993 | 7.5 | 2,079 | 945 | 409 | 24.0 | 333 | 20.4 | 2,703 | 198 | 63.5 |
| Great Northern .....1925 | 45,993 | 12,669 | 58,662 | 6.9 | .... | 1,576 | 756 | 27.0 | 336 | 17.7 | 2,431 | 170 | 36.7 |
| 1924 | 45,743 | 8,235 | 53,978 | 5.2 | .... | 1,425 | 678 | 25.9 | 315 | 16.6 | 2,087 | 193 | 36.8 |
| Minn., St.P. & S. Ste. M...1925 | 20,412 | 6,297 | 26,709 | 4.7 | 911 | 1,170 | 550 | 24.4 | 345 | 21.2 | 2,274 | 142 | 54.9 |
| 1924 | 18,812 | 5,958 | 24,770 | 5.7 | 245 | 1,085 | 495 | 23.5 | 306 | 20.3 | 1,893 | 159 | 50.6 |
| Northern Pacific.....1925 | 35,317 | 9,025 | 44,342 | 7.0 | .... | 1,589 | 740 | 26.4 | 449 | 24.2 | 3,103 | 148 | 42.7 |
| 1924 | 35,188 | 10,859 | 46,047 | 5.2 | 2,850 | 1,494 | 715 | 26.5 | 408 | 20.6 | 2,936 | 152 | 40.4 |
| Oreg.-Wash. R. R. & Nav..1925 | 6,383 | 3,125 | 9,508 | 3.0 | .... | 1,577 | 738 | 26.6 | 469 | 24.6 | 2,050 | 219 | 44.5 |
| 1924 | 7,075 | 4,023 | 11,098 | 3.1 | .... | 1,413 | 667 | 27.4 | 402 | 20.6 | 2,049 | 234 | 46.1 |
| Central Western Region: | | | | | | | | | | | | | |
| Atch., Top. & S. Fe (inc..1925 | 54,719 | 17,414 | 72,133 | 7.1 | 12,434 | 1,637 | 630 | 22.4 | 458 | 31.7 | 3,292 | 143 | 58.0 |
| P. & S. F.).....1924 | 49,977 | 15,709 | 65,686 | 6.5 | 10,272 | 1,521 | 570 | 21.3 | 417 | 30.1 | 2,777 | 162 | 54.9 |
| Chicago & Alton.....1925 | 9,533 | 5,384 | 14,917 | 3.8 | .... | 1,400 | 601 | 26.2 | 446 | 27.4 | 6,539 | 187 | 85.6 |
| 1924 | 9,000 | 6,042 | 15,042 | 3.2 | .... | 1,301 | 548 | 26.0 | 415 | 25.3 | 6,181 | 210 | 77.4 |
| Chi., Burl. & Quincy.....1925 | 50,582 | 20,991 | 71,573 | 7.5 | 600 | 1,648 | 774 | 29.3 | 615 | 34.0 | 4,728 | 171 | 61.3 |
| 1924 | 49,609 | 22,962 | 72,571 | 6.4 | .... | 1,521 | 720 | 29.3 | 581 | 31.6 | 4,520 | 198 | 62.5 |
| Chi., Rock I. & Pacific....1925 | 33,586 | 22,609 | 56,195 | 10.5 | 8,224 | 1,227 | 517 | 23.0 | 428 | 28.0 | 3,197 | 181 | 67.1 |
| 1924 | 33,113 | 21,684 | 54,797 | 8.5 | 7,095 | 1,117 | 465 | 22.7 | 395 | 26.2 | 2,859 | 213 | 66.6 |
| Denver & R. G. Wn.....1925 | 10,851 | 4,295 | 15,146 | 5.7 | 3,101 | 1,391 | 664 | 29.5 | 383 | 19.8 | 2,262 | 243 | 42.9 |
| 1924 | 12,823 | 3,572 | 16,395 | 6.0 | 3,190 | 1,280 | 619 | 29.8 | 335 | 17.1 | 2,115 | 258 | 40.1 |
| Oregon Short Line.....1925 | 6,611 | 5,164 | 11,775 | 5.9 | .... | 1,541 | 736 | 29.4 | 661 | 33.0 | 3,231 | 154 | 52.5 |
| 1924 | 7,210 | 5,445 | 12,655 | 5.4 | .... | 1,417 | 682 | 29.5 | 634 | 31.2 | 3,393 | 161 | 56.7 |
| S. P. (Pacific System)....1925 | 29,223 | 28,308 | 57,531 | 5.8 | 8,887 | 1,730 | 722 | 25.3 | 525 | 31.8 | 3,557 | 143 | 56.4 |
| 1924 | 25,550 | 26,745 | 52,295 | 5.5 | 7,519 | 1,599 | 650 | 24.1 | 532 | 34.0 | 3,302 | 156 | 61.3 |
| Union Pacific .....1925 | 19,095 | 8,391 | 27,486 | 11.8 | .... | 1,782 | 776 | 23.7 | 759 | 44.7 | 5,680 | 151 | 52.4 |
| 1924 | 17,681 | 8,227 | 25,908 | 10.9 | .... | 1,609 | 720 | 24.4 | 855 | 48.3 | 5,961 | 165 | 60.7 |
| Southwestern Region: | | | | | | | | | | | | | |
| Gulf, Colo. & S. Fe.....1925 | 9,199 | 5,654 | 14,853 | 3.3 | 1,986 | 1,691 | 720 | 24.9 | 439 | 27.6 | 3,448 | 127 | 69.6 |
| 1924 | 9,115 | 4,467 | 13,582 | 3.8 | 2,624 | 1,609 | 729 | 25.6 | 430 | 24.5 | 3,081 | 132 | 56.5 |
| Mo.-Kans.-Tex .....1925 | 7,630 | 6,636 | 14,266 | 4.7 | .... | 1,868 | 746 | 23.1 | 425 | 29.6 | 3,411 | 123 | 56.9 |
| 1924 | 8,795 | 6,771 | 15,566 | 4.0 | 3,618 | 1,682 | 678 | 22.7 | 352 | 24.6 | 3,039 | 140 | 41.0 |
| Mo.-Kans.-Tex. of Tex....1925 | 286 | 13,848 | 14,134 | 7.9 | .... | 1,435 | 541 | 21.8 | 254 | 19.6 | 2,679 | 139 | 54.0 |
| 1924 | 280 | 10,957 | 11,237 | 10.5 | 3,186 | 1,308 | 519 | 22.4 | 289 | 20.1 | 2,336 | 151 | 50.7 |
| Missouri Pacific .....1925 | 26,882 | 25,493 | 52,375 | 7.9 | .... | 1,491 | 668 | 26.6 | 610 | 35.5 | 4,392 | 160 | 80.0 |
| 1924 | 26,728 | 22,337 | 49,075 | 8.4 | .... | 1,411 | 654 | 26.5 | 544 | 29.9 | 3,653 | 167 | 69.5 |
| St. Louis-San Francisco...1925 | 19,423 | 13,105 | 32,528 | 5.0 | 19 | 1,198 | 502 | 24.5 | 451 | 29.4 | 3,133 | 188 | 62.3 |
| 1924 | 19,623 | 12,316 | 31,539 | 5.2 | .... | 1,067 | 456 | 24.4 | 384 | 24.1 | 2,617 | 212 | 54.8 |
| Southern Pacific Lines (in 1925 | 9,483 | 17,125 | 26,608 | 6.5 | 4,143 | 1,345 | 564 | 25.3 | 439 | 27.8 | 3,126 | 132 | 74.1 |
| Tex. and La.)[2].....1924 | 8,091 | 15,262 | 23,353 | 5.0 | 2,947 | 1,230 | 530 | 25.3 | 483 | 29.0 | 3,045 | 137 | 73.9 |
| Texas & Pacific .....1925 | 6,715 | 6,749 | 13,194 | 9.0 | .... | 1,366 | 517 | 21.2 | 353 | 27.2 | 2,703 | 157 | 53.1 |
| 1924 | 5,621 | 6,183 | 11,804 | 7.9 | .... | 1,268 | 501 | 21.4 | 380 | 28.0 | 2,611 | 162 | 51.2 |

*Compiled by Bureau of Statistics, Interstate Commerce Commission. Subject to revision.*

## Quebec Does Not Want Ontario's Railway to Tap Its Gold Fields

Premier L. A. Tashereau, of Quebec, has informed Chief Commissioner George Lee and Commissioner L. T. Martin, of the Temiskaming & Northern Ontario Railway, that the Quebec government will oppose the building of an extension of that railway eastward into the Rouyn gold field in northwestern Quebec. While the Temiskaming & Northern Ontario, which is owned and controlled by the province of Ontario, requires no provincial charter, since the proposed extension into Rouyn would be built by its subsidiary, the Nipissing Central Railway Company, which operates under a Federal charter, the T. & N. O. commissioners sought from the Quebec government permission for a right-of-way through timber areas now under lease by the Riordon Lumber Company. Premier Taschereau told the commissioners he was opposed to allowing Ontario to cut down Quebec trees for the building of such a road.

The Quebec government takes the position that the development of the vast Abitibi region in the north should center upon Montreal and Quebec. Two railway bills have been put through the Quebec Legislature this session to serve such a purpose. One of these new lines is the Abitibi Southern Railway Company, to connect new Quebec from Amos to Montreal and Ottawa, linking up with the Canadian Pacific at Mont Laurier and Maniwaki. The other provides for a branch line into the Rouyn region to be built by the Canadian National Railways.

## Southern Pine Association Adopts Grade Marking

The grade marking of Southern pine lumber and timber was adopted as a regularly authorized practice of its subscriber mills at the tenth annual meeting of the Southern Pine Association, held in New Orleans, La., on March 24 and 25. It became effective on April 1.

The marking is placed on the end of each piece of lumber or timber and consists of a number within a circle which identifies the mill producing the lumber, the letters "S P A" as the official symbol of the association and the grade—for example: "B & BTR" for B and Better, or "No. 1 COM" for No. 1 Common, whatever the grade may be. The stamps and dies and mill numbers for grade-marking and trade-marking under the Southern Pine Association's guarantee must be secured from the association, and only subscriber mills can be authorized to use this "S P A" brand, for the reason that only subscriber mills receive the association's official inspection service, by which the integrity of the association's standard grades for southern yellow pine is maintained.

Grade-marking under this plan means protection to the manufacturer who puts his best skill into his product, because his identity stays with that lumber through to the ultimate consumer and his certified quality product is backed up by the guarantee of the association's inspection service and grades. It means protection to the honest lumber distributor against unfair competition on the part of dealers who may juggle and raise the grades.

The association's grade-marking plan conforms to the recommendations adopted by the National Standardization Conference on this subject and has been endorsed by practically all of the larger organizations interested in the manufacture and use of lumber.

## Advocates Closer Co-operation Between Canadian Railways

A writing down in the capitalization of the Canadian National and closer co-operation between that system and the Canadian Pacific were urged in the House of Commons in Ottawa last week by Robert Forke, leader of the Progressives.

"I believe," he said, "it would be in the interest of all concerned if the capitalization of these railways (the Canadian National) were written down to their actual physical value. I see no good purpose being served by carrying them on at a fictitious capitalization. It is discouraging to the management; it gives a false impression, and if the capitalization were written down, we would be in a position to know exactly the capabilities of our national railways. If the amount was reduced, it is quite possible that in a few years the fixed charges of $40,000,000 may be met by these railways. We all look with hope to the future, and expect the day will not be far distant when these railways, instead of being a liability, will be an asset to the Dominion of Canada.

"We have in this country two railways that, I think, we may be proud of in some respects. We have a good system in the Canadian National Railways. I hope all of us are proud of the Canadian Pacific. I would not for a moment have the idea go out that any of the members of this House had any hostility to the Canadian Pacific. Its progress, its prosperity, its welfare is as essential to the country as that of the Canadian National. It would be a calamity should anything happen to the Canadian Pacific Railway, but there are some suggestions that might be handed out to the managements of both these roads. It would be a good idea if someone could get the ear of President Beatty of the Canadian Pacific and the ear of Sir Henry Thornton of the Canadian National and intimate to them that it is time they were getting together and cutting down some of the extra expenses that are incurred through duplication of services on these two railways. This idea that the two railways have to continue to cut each other's throats, trying the one to beat the other in getting traffic and all that sort of thing will not get us out of the dilemma in which we are today. I am certain that a great deal of saving, of economy could be effected were the managements of these two railways to work together harmoniously to such an end. I think the Canadian Pacific Railway would be quite agreeable. I am sure they are anxious to make as profitable a showing as possible and I think that both railways as well as the country would be benefited by some arrangement of this kind. If this could not be done I should be inclined to pay some attention to the suggestion of W. F. Maclean (member for South York) that there should be an amalgamation of the two railways. One thing is certain and that is that we cannot go on as we are doing at present. It seems to me the railways could be more economically managed than they are today. Even if we sold the Canadian National, does anyone think for a moment that anybody would buy the system at its present capitalization? They would be sold at their physical value and the country would still have to bear the burden in connection with that over-capitalization; it would have to pay the interest that accrues on the bonds that were sold to build them. So that private ownership will not relieve us from any of the difficulties in this respect."

## Proposes Merger of C. P. R. and C. N. R.

Declaring that one of the disadvantages of the Canadian Pacific was that much of its stock was owned outside of Canada and that the stock "was kicked about on the New York and London exchanges," and also contending that great economies could be effected through the elimination of duplication of services, W. F. Maclean, a Conservative and the oldest continuous member of the House of Commons at Ottawa, in a speech a few days ago, came out strongly for a merger of the Canadian Pacific and the Canadian National, that consolidation to be publicly owned and controlled. This is the second time within a week that a getting together of the two roads for economy's sake has been advocated in the Canadian Parliament. True, in both cases it was from members of minority parties, the other occasion being that of the speech of Robert Forke, leader of the Progressives.

Mr. Maclean, who occupies one of the Toronto seats in the Canadian Parliament, said, in part, as follows: "The transportation problem now before Canada and before this House is bigger than the Canadian Pacific, and all I say is that it would be to the interest of the country, and I think, the interest of the shareholders of that company, that a merger of all the services of the Canadian Pacific with the Canadian National should take place today before there is more raiding of a good Canadian security on the New York stock exchange. The main weakness of the Canadian Pacific is that its stock today is owned outside of Canada, and kicked about the New York and London stock markets whenever they like, and the control thereof might pass any day into the hands of an American railway. The Canadian National is absolutely owned by the people of Canada; it is subject to our policy, and our policy as a nation only, and finally we cannot keep up a duplex system of railways, one-half of which might be held in Canada and the other half outside of Canada.

"Now, I want to come to my proposals. I have rewritten this very carefully, and it is what I desire to present to the House and the country in dealing with this merging of railways so as to reach a solution of the question of regulation of ocean freight rates. This is my proposal in a word:

"1. Such rerouting of main lines and branches as might be dictated by the better grades, mountain passes, bridge crossings, tun-

nels, approaches to stations, etc., held by one or other of the companies;

"2. The consolidation of the cartage, telegraph and express services of the systems (perhaps taking over the parcel post, postal and money orders of the post office), thereby cutting out all unnecessary services and buildings, rents, etc., and perhaps using local post offices at places as aids to these national services;

"3. The cutting out of all unnecessary trackage, bridges, tunnels, stations, buildings, tanks, plants, etc., and thereby releasing material for any double trackage required, or other additions that the traffic thus rerouted and consolidated might call for;

"4. Also cutting out all unnecessary executives and staffs, officials and offices, headquarters, and attendant expenses;

"5. Also cutting out and selling any unnecessary engines and unnecessary official sleeping, dining, passenger, postal, freight and other cars and equipment that the consolidation permitted;

"6. Also cutting out all unnecessary printing and advertising charges and other propaganda; and all unnecessary solicitation and canvass for business caused by the present needless rivalry of branch and main line services.

"All of which would involve:

"1. Some system of half-pay or pensions for men let out by this consolidation; and,

"2. A better system of pensions for long-service men generally;

"3. And further involving a revaluation of these consolidated services and a reorganization of their securities now in existence, as fast as present commitments will permit and improved financing might suggest.

"There may be a wise time to sell a successful private-owned railway property, especially if in the near future the traffic were limited to long hauls of freight by land and sea; and if the Canadian Pacific should determine to sell, a commission of three men made up of the presidents of the Canadian Pacific and the Canadian National and one other arbitrator ought to be able to fix a fair amount for the consideration of Parliament as compensation to the Canadian Pacific shareholders for the transfer of all their services and assets to the National Railways. And such a consolidation of these roads and services might suggest to Parliament the creation of a new corporation to be called National Canadian Carriers, an organization that would include these railway, ocean, express and telegraph services and other services on highways and waterways, said carriers being further empowered to take up, as need may call for, any coming developments in such service and communications of all kinds by radio, beam, wireless or cable, as inventors or promoters may be prepared to submit or the policy of the new consolidated directorate might determine or Parliament order. All such common carriers in the widest sense to be national, or under national control, and in no way dictators to Parliament or the nation. This is where the tragedy that is now at our doors will end and national prosperity begin afresh."

# Meetings and Conventions

*The following list gives names of secretaries, dates of next or regular meetings and places of meetings.*

AIR BRAKE ASSOCIATION.—F. M. Nellis, 165 Broadway, New York City. Next Convention, May 26-29, 1925, Alexandria Hotel, Los Angeles, Calif. Exhibit by Air Brake Appliance Association.

AIR BRAKE APPLIANCE ASSOCIATION.—John B. Wright, Westinghouse Air Brake Co. Meeting with Air Brake Association.

AMERICAN ASSOCIATION OF ENGINEERS.—C. E. Drayer, 63 E. Adams St., Chicago. Next convention, 1925, Orlando, Fla.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—Grant Williams, 1341 Railway Exchange, Chicago.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 332 So. Michigan Ave., Chicago. Annual meeting, June 23, 1925, Portland, Ore.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope. C. R. R. of N. J., 143 Liberty St., New York.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—J. Rothschild, Room 400, Union Station, St. Louis, Mo. Next convention, June 16-19, 1925, Richmond, Va.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—C. H. Shircliffe, Chicago & North Western Ry., Chicago. Annual meeting, October 6, Hotel Statler, St. Louis, Mo.

AMERICAN ELECTRIC RAILWAY ASSOCIATION.—J. W. Welsh, 8 W. 40th St., New York.

AMERICAN RAILROAD MASTER TINNERS', COPPERSMITHS' AND PIPE FITTERS' ASSOCIATION.—C. Borcherdt, 202 North Hamilton Ave., Chicago, Ill.

AMERICAN RAILWAY ASSOCIATION.—H. J. Forster, 30 Vesey St., New York, N. Y.

Division I.—Operating.—J. C. Caviston, 30 Vesey St., New York.

Freight Station Section (including former activities of American Association of Freight Agents).—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago, Ill. Next meeting, May 19-21, 1925, Kansas City, Mo.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York. Next meeting, May 26, Atlantic City, N. J.

Protective Section (including former activities of the American Railway Chief Special Agents and Chiefs of Police Association).—J. C. Caviston, 30 Vesey St., New York, N. Y. Next meeting, July 8-10 Atlantic City, N. J.

Safety Section.—J. C. Caviston, 30 Vesey St., New York. Annual meeting, April 28-30, Morrison Hotel, Chicago.

Telegraph and Telephone Section (including former activities of the Association of Railroad Telegraph Superintendents). W. A. Fairbanks, 30 Vesey St., New York.

Division II.—Transportation (including former activities of the Association of Transportation and Car Accounting Officers.)—G. W. Covert, 431 South Dearborn St., Chicago, Ill. Next meeting, April 8, Jefferson Hotel, Richmond, Va.

Division III.—Traffic, J. Gottschalk, 143 Liberty St., New York.

Division IV.—Engineering, E. H. Fritch, 431 South Dearborn St., Chicago, Ill. Exhibit by National Railway Appliances Association.

Construction and Maintenance Section.—E. H. Fritch.

Electric Section.—E. H. Fritch.

Signal Section (including former activities of the Railway Signal Association).—H. S. Balliet, 30 Vesey St., New York, N. Y.

Division V.—Mechanical (including former activities of the Master Car Builders' Association and the American Railway Master Mechanics' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill. Business meeting, June 16-18, 1925. No exhibit in 1925.

Equipment Painting Section (including former activities of the Master Car and Locomotive Painters' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill.

Division VI.—Purchases and Stores (including former activities of the Railway Storekeepers' Association).—W. J. Farrell, 30 Vesey St., New York, N. Y. Annual meeting, May 19-21, St. Louis, Mo.

Division VII.—Freight Claims (including former activities of the Freight Claim Association).—Lewis Pilcher, 431 South Dearborn St., Chicago, Ill. Annual meeting, May 25-28, 1925, Hotel Muehlebach, Kansas City, Mo.

Car Service Division—C. A. Buch, 17th and H Sts., N. W., Washington, D. C.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Chicago. Next convention, October 20-22, 1925, Buffalo, N. Y. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—A. L. Moorshead, Industrial Engineer, Erie R. R., New York, N. Y. Next meeting, May 13-15, 1925, San Antonio, Texas.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—(Works in co-operation with the American Railway Association Division IV.) E. H. Fritch, 431 South Dearborn St., Chicago. Exhibit by National Railway Appliances Association.

AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—(See American Railway Association, Division V.)

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C. M. & St. P. Ry., 1402 Calumet Ave., Chicago. Annual convention, August, 1925, Hotel Sherman, Chicago. Exhibit by Supply Association of the American Railway Tool Foremen's Association.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—T. F. Whittelsey, 1319-21 F St., N. W., Washington, D. C.

AMERICAN SOCIETY FOR STEEL TREATING.—W. H. Eisenman, 4600 Prospect Ave., Cleveland, Ohio. Annual convention, week of September 14, 1925, Cleveland, Ohio.

AMERICAN SOCIETY FOR TESTING MATERIALS.—C. L. Warwick, 1315 Spruce St., Philadelphia, Pa. Annual meeting, June 22-26, Chalfonte-Haddon Hall, Atlantic City, N. J.

AMERICAN SOCIETY OF CIVIL ENGINEERS.—33 W. 39th St., New York. Regular meetings 1st and 3rd Wednesday in month, except July and August, 33 W. 39th St., New York.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York. Railroad Division, A. F. Stuebing, Chief Engineer, Bradford Draft Gear Co., 23 W. 43rd St., New York.

AMERICAN TRAIN DISPATCHERS' ASSOCIATION.—C. L. Darling, 10 East Huron St., Chicago, Ill. Biennial convention, July 20, 1925, Chicago.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—E. J. Stocking 111 West Washington St., Chicago. Next convention, January 26-28, 1926, Cleveland, Ohio.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—H. D. Morris, District Claim Agent, Northern Pacific Ry., St. Paul, Minn. Annual meeting, June 17, 1925, Winnipeg, Canada.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Sta., Chicago. Annual meeting, October 20-24, Hotel Sherman, Chicago. Exhibit by Railway Electrical Supply Manufacturers' Association.

ASSOCIATION OF RAILWAY EXECUTIVES.—Stanley J. Strong, 17th and H Sta., N. W., Washington, D. C.

ASSOCIATION OF RAILWAY SUPPLY MEN.—E. E. Thulin, Peoples Gas Bldg., Chicago. Meeting with International Railway General Foremen's Association.

ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—(See American Railway Association, Division I.)

ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—(See American Railway Association, Division II.)

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—B. J. Wilson, Pocket List of Railroad Officials, 605 Fisher Building, Chicago. Meeting with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 129 Charron St., Montreal, Que.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 626 North Pine Ave., Chicago. Regular meetings, 2nd Monday in month, except June, July and August, Great Northern Hotel, Chicago.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—R. E. Giger, 721 North 23rd St., East St. Louis, Ill. Meetings, first Tuesday in month at the American Hotel Annex, St. Louis.

CENTRAL RAILWAY CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 2nd Thursday, January to November. Interim meetings, 2nd Thursday, February, April, June, Hotel Statler, Buffalo, N. Y.

CHICAGO CLAIM CONFERENCE, Personal Injury Section.—F. L. Johnson, Chicago & Alton R. R., 340 Harrison St., Chicago. Meets 12:30 p. m., first Monday each month, Sherman Hotel, Chicago.

CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.—A. S. Sternberg, Belt Ry. of Chicago, Polk and Dearborn Sts., Chicago.

CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S SUPPLY MEN'S ASSOCIATION.—Bradley S. Johnson, W. H. Miner, Rookery Bldg., Chicago, Ill. Meeting with Chief Interchange Car Inspectors' and Car Foremen's Association.

CINCINNATI RAILROAD CLUB.—W. C. Cooder, Union Central Bldg., Cincinnati, Ohio. Meetings, 2nd Tuesday in February, May, September and November.

CLEVELAND STEAM RAILWAY CLUB.—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Meetings, first Monday each month, Hotel Cleveland, Public Square, Cleveland.

EASTERN RAILROAD ASSOCIATION.—E. N. Bessling, 614 F St., N. W., Washington, D. C. Annual meeting, May 14, 1925, Railroad Club, New York.

FREIGHT CLAIM ASSOCIATION.—(See American Railway Association, Division VII.)

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich. Next meeting, August 18-20, 1925, Hotel Winton, Cleveland, O. Exhibit by International Railroad Master Blacksmiths' Supply Men's Association.

INTERNATIONAL RAILWAY CONGRESS.—Office of Permanent Commission of the Association, 74 rue du Progrès, Brussels, Belgium. General secretary, P. Ghilain. Next session of the Congress, London, June 22-July 6.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—J. B. Hutchison, 6000 Michigan Ave., Chicago. Next annual convention, May 26-29, 1925, Hotel Sherman, Chicago. Exhibit by International Railway Supply Men's Association.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabash Ave., Winona, Minn. Annual convention, September 8-11, 1925, Hotel Sherman, Chicago.

INTERNATIONAL RAILWAY SUPPLY MEN'S ASSOCIATION.—F. S. Wilcoxen, The Edna Brass Manufacturing Company, 460 McCormick Bldg., Chicago, Ill. Meeting with International Railway Fuel Association.

MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 26 Cortlandt St., New York. Next convention, May 19-22, 1925, Hotel Sherman, Chicago.

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION.—(See A. R. A., Division V.)

MASTER CAR BUILDERS' ASSOCIATION.—(See A. R. A., Division V.)

MOBILE TRAFFIC & TRANSPORTATION CLUB.—T. C. Schley, 71 Conti St., Mobile, Ala. Regular dinner meetings, 6 p. m. on 2nd Thursday of each month, Cawthon Vineyard, Mobile, Ala.

NATIONAL ASSOCIATION OF RAILWAY TIE PRODUCERS.—J. S. Penney, T. J. Moss Tie Company, St. Louis, Mo. Next convention, 1925, Chicago.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—James B. Walker, 49 Lafayette St., New York.

NATIONAL FOREIGN TRADE COUNCIL.—O. K. Davis, 1 Hanover Square, New York. Twelfth convention, June 24-26, Seattle, Wash.

NATIONAL HIGHWAY TRAFFIC ASSOCIATION.—Elmer Thompson, 12 East 53rd St., New York.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, 825 South Wabash Ave., Chicago. Annual exhibition at convention of American Railway Engineering Association

NATIONAL SAFETY COUNCIL.—Steam Railroad Section: E. R. Cott, Safety Agent, Hocking Valley Ry., Columbus, Ohio.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, 2nd Tuesday in month, excepting June, July, August and September, Copley-Plaza Hotel, Boston, Mass.

NEW YORK RAILROAD CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 3rd Friday in month, except June, July and August, at 29 W. 39th St., New York.

PACIFIC RAILWAY CLUB.—W. S. Wollner, 64 Pine St., San Francisco, Cal. Regular meetings, 2nd Thursday in month, alternately in San Francisco and Oakland.

RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—E. R. Woodson, 1116 Woodward Building, Washington, D. C. Annual meeting, June 10, 1925, Hotel Traymore, Atlantic City, N. J.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 600 Liberty Bldg., Broad and Chestnut Sts., Philadelphia, Pa.

RAILWAY CAR MANUFACTURERS' ASSOCIATION.—W. C. Tabbert, 61 Broadway, New York.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 515 Grandview Ave., Pittsburgh, Pa. Regular meetings, 4th Thursday in month, except June, July and August, Fort Pitt Hotel, Pitsburgh, Pa.

RAILWAY DEVELOPMENT ASSOCIATION.—(See Am. Ry. Development Assn.)

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—Edward Wray, 9 S. Clinton St., Chicago. Annual meeting with Association of Railway Electrical Engineers.

RAILWAY EQUIPMENT MANUFACTURERS' ASSOCIATION.—Joseph Sinkler, Pilot Packing Co., Peoples Gas Bldg., Chicago. Meeting with Traveling Engineers' Association.

RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.

RAILWAY REAL ESTATE ASSOCIATION.—C. C. Marlor, Room 1143, Transportation Building, Chicago.

RAILWAY SIGNAL ASSOCIATION.—(See A. R. A., Division IV., Signal Section.)

RAILWAY STOREKEEPERS' ASSOCIATION.—(See A. R. A., Division VI.)

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division, A. R. A. No exhibit in 1925.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 30 Church St., New York. Meets with Telegraph and Telephone Section of A. R. A., Division I.

RAILWAY TREASURY OFFICERS' ASSOCIATION.—L. W. Cox, Commercial Trust Bldg., Philadelphia, Pa.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—P. J. McAndrews, C. & N. W. Ry., Sterling, Ill. Next convention, September 22-24, 1925, Kansas City, Mo. Exhibit by Track Supply Association.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2nd Friday in month, except June, July and August.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, Sunbeam Electric Manufacturing Company, New York City. Meeting with American Railway Association, Signal Section.

SOUTHEASTERN CARMEN'S INTERCHANGE ASSOCIATION.—J. E. Rubley, Southern Railway Shop, Atlanta, Ga. Meets semi-annually.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, P. O. Box 1205, Atlanta, Ga. Regular meetings, 3rd Thursday in January, March, May, July, September and November, Piedmont Hotel, Atlanta.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—J. L. Carrier, Car. Serv. Agent, Tenn. Cent. Ry., 319 Seventh Ave., North Nashville, Tenn.

SUPPLY ASSOCIATION OF AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—H. S. White, 9 N. Jefferson St., Chicago.

TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo-Ajax Corporation, Hillburn, N. Y. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, 1177 East 98th St., Cleveland, Ohio. Annual meeting, September 15-18, 1925, Chicago. Exhibit by Railway Equipment Manufacturers' Association.

WESTERN RAILWAY CLUB.—Bruce V. Crandall, 226 West Jackson Boulevard, Room 1001, Chicago. Annual meeting, May 23, Edgewater Beach Hotel, Chicago. Regular meetings, 3rd Monday each month, except June, July and August.

WESTERN SOCIETY OF ENGINEERS.—Edgar S. Nethercut, 1735 Monadnock Block, Chicago, Ill.

# Traffic News

The Atlantic States Shippers' Advisory Board is to hold its sixth regular meeting at the Bellevue-Stratford Hotel, Philadelphia, on Thursday, April 9, beginning at 10 a. m.

N. W. Keller has been appointed traffic manager of the Pacific Portland Cement Company, San Francisco, Cal., in place of James A. Keller, promoted to be vice-president.

The Traffic Club of Knoxville, Tenn., was organized on March 18 by shippers and railroad men. Officers elected were, president, R. R. Morris; vice-presidents, E. F. Stone, and H. V. Holston; and secretary-treasurer, H. V. Schettler.

The railroads of New England, at a conference held in Boston on March 30, voted to invite the merchants and manufacturers of that territory to establish a regional advisory board, like those now in operation in other parts of the country; to co-operate with the car-service division of the American Railway Association in the promotion of efficiency and economy in freight transportation.

The Canadian National hauled 3,899,175 tons of grain from the Prairie provinces to the head of the Great Lakes in 1924, while the Canadian Pacific hauled 3,871,661 tons. To Vancouver the Canadian National hauled 584,922 tons of grain, and the Canadian Pacific 961,500 tons. The rate per ton-mile on the eastboard grain was 0.496 cents on the Canadian National. The rate per ton-mile on the Canadian Pacific was not shown in the return.

Regulation of omnibuses is the object of two bills which were introduced into the legislature of Michigan by Senator H. S. Karcher on March 25. One bill gives steam and electric railways permission to own and operate motor buses, supplemental to their regular services, the Public Utilities Commission to have supervision, as over independent bus lines. The bill provides that no certificate of necessity or convenience shall be required. In cases where rates are not fixed by agreement with municipalities they shall be fixed by the commission.

Officers elected by the Traffic Club of Chicago on March 31 for the ensuing year were: President, E. S. Buckmaster, assistant general agent of the American Railway Express Company; first vice-president, Murray N. Billings, assistant traffic manager of the Illinois Steel Company; second vice-president, Stuart A. Allen, freight traffic manager of the Baltimore & Ohio; third vice-president, M. H. Kennelly, president of Warner Bros. Fireproof Storage Company; secretary, H. E. MacNiven, traffic manager of Edward Lasham Company; and treasurer, R. J. Wallace, traffic manager of the Jaques Manufacturing Company.

## Meeting of State Commissioners

The executive committee and the committee on co-operation between state and federal commissions of the National Association of Railway and Utilities Commissioners held a meeting at Washington on March 25 at which a committee of fifteen members was appointed to co-operate with the Interstate Commerce Commission in the investigation it has undertaken of the general rate structure, under the Hoch-Smith resolution. A sub-committee of three members was also appointed to keep in close touch with the investigation. Chairman Aitchison of the federal commission attended the meeting and outlined the purpose of the investigation under the order, which he said the commission had issued after a great deal of consideration of the purpose of Congress. He said the resolution has become a part of the law which governs the commission's actions but that manifestly it could not be complied with in any hurried way but required an investigation conducted in an orderly manner.

Consideration was also given to the situation resulting from the Supreme Court's decisions holding invalid statutes in Maryland and Washington under which the states sought to regulate interstate motor vehicle common carriers. It was decided to request the legislative committee to present to Congress the situation thus created and to ask it to give the state commissions power to act at least until the federal government occupies the field, and a special committee of three was appointed to consider the subject.

# Commission and Court News

## Interstate Commerce Commission

The Commission has denied the petition of the Delaware & Hudson that the New England divisions freight-rate case be re-opened for further investigation.

The Interstate Commerce Commission has rendered a decision finding increased switching charges at Kansas City proposed by the Kansas City Southern justified in part. The suspended schedules were ordered cancelled without prejudice to the filing of schedules in conformity with the findings of the commission that the proposed increases in the reciprocal switching charges on grain products and on live stock in trains of ten cars or more have been justified; that the proposed increases in the reciprocal charges on other traffic have not been justified, but that the reciprocal charges on such other traffic have been justified to the extent of $6.40 where it is proposed to increase the charges to $7; to the extent of $7.50 where it is proposed to increase the charges to $8.25; to the extent of $9 to and from Mt. Washington, Fairmont Park, and Sugar Creek, and to the extent of $9 per car as a minimum charge to Leeds under the per-100-pound rates; charges to the extent of $8 and $9 to team tracks where charges of $9 and $10.25, respectively, are proposed, and intra or interyard charges to the extent of $1 per car higher than the reciprocal charges approved.

## Personnel of Commissions

Thomas F. Woodlock, who was given a recess appointment as a member of the Interstate Commerce Commission by President Coolidge, took the oath of office and assumed his duties on the commission on April 1.

The name of the Kansas Public Utilities Commission has been changed by law to "Public Service Commission." The members of the commission, appointed by the governor, are, L. P. Hussey, chairman, and Clarence Smith, Frank O'Brien, J. W. Greenleaf, and W. C. Miller, commissioners.

## State Commissions

The railroad commissioners of South Dakota, acting under a law which has just been passed, are preparing regulations for the operation of automobile trucks when doing a common carrier business. The legislature also passed a law exempting from taxation, for ten years, all new railroads hereafter built in that state.

## Court News

### Return of Defective Car Not Violation of Law

A terminal company receiving cars for transfer between other roads received a car with a defective running board, marked it for return as in bad order, and retained it until a string of cars for the company sending it had accumulated, when it was returned. The Circuit Court of Appeals, Sixth Circuit, holds that such retention and return were not a violation of the Safety Appliance Act.—U. S. v. Louisville & J., 1 Fed. (2nd) 646.

### Safety Appliance Act Held Not to Apply to Car Inspectors

The Texas Court of Civil Appeals holds that, while the alinement of a drawhead preparatory to impact is a part of the act of coupling within the federal Safety Appliance Act, the act does not require drawbars to be kept in perfect alinement at all times. They must have some freedom of action to negotiate curves. The statutory duty is to keep them in such alinement and so equipped that they will couple automatically without the necessity of anyone going between the ends of the cars.

It is also held that a car inspector whose duty it is to discover and repair defects in couplings, cannot recover under the federal act for injuries received in the course of his employment. This appears to be the first case in which the question of the application of the act to car inspectors has been passed upon.—K. C. M. & O. (Tex. Civ. App.) 262 S. W. 520.

## United States Supreme Court

### Land-Grant Deductions From Freight Charges

Action was brought in the federal Court of Claims to recover the amount by which tariff rate freight charges on certain coal were reduced by government land-grant deductions, and for switching and handling charges. From judgment for the government (57 Ct. Cl. 268) the Louisville & Nashville appealed. The coal was carried from the mines in the Birmingham district through Flomaton and Pensacola to River Junction, Fla. It was purchased for government engineering work except 250 tons bought for the use of the U. S. S. Tonopah. The Supreme Court of the United States holds that all the coal, except that furnished the Tonopah, was delivered to and became the property of the United States before it was hauled by the railroad, and was entitled to the reduced rates. The general rule is that title passes from seller to buyer with the delivery of the goods. The agreements in the contract by the contractor to transfer the coal from cars to government barges and to tow it to points on the Gulf coast were held not essential to or part of the sale, and did not indicate that the parties intended that delivery should not be made until after transportation. Reservation by the government of the right to inspect and test the coal after transportation and to reject it was not inconsistent with transfer of title at the time of delivery at the mine, none of the coal being rejected.

In the case of the coal furnished to the Tonopah, it was held that there was nothing to indicate that title passed before delivery at the vessel. For this coal the United States paid the freight less land-grant deductions.

The court agreed with the Court of Claims that acceptance of payment of the land-grant rates concluded the railroad. Not having protested against any land-grant deductions, it was bound by its acquiescence and consent and could not recover the amounts deducted.

It was held that the Court of Claims was right in disallowing additional pay for switching cars to wharves or for transferring coal from cars to boats. The tariff rates on this coal were $1.10 per short ton to Mobile or Pensacola. Under the tariff the cost of transferring such coal from cars to vessels at Mobile and Pensacola was assumed by the railroad if the road haul revenue was $1 per ton or more. After land-grant deduction, the balance to be paid in money was less than a dollar a ton; but the court holds that part of the railroad's compensation for hauling the coal was paid in land, and the balance was paid in money. It could not be said that the total was less than a dollar a ton.—Louisville & Nashville v. United States. Decided March 2, 1925. Opinion by Mr. Justice Butler.

A similar action, brought October 29, 1917, for freight charges on coal, sand, cement, piling and lumber shipments over the Chicago, Milwaukee & St. Paul's land-aided lines in the years 1909 to 1916, inclusive, was decided at the same time. Some of the lines were constructed by the aid of lands granted by an Act of Congress of May 12, 1884, § 3, c. 84. The railroad deemed the United States to be entitled to have its property transported over such lines at 50 per cent of the tariff rates. Two of its lines in Minnesota were constructed by the aid of land granted by an Act of Congress of July 4, 1866, § 3, c. 167. The railroad made no charges for the shipments that moved over these lines. The railroad alleged that when it received and transported this freight it believed it belonged to the United States, and had no intimation that the shipments were private property until the latter part of 1916. The Court of Claims held that all the shipments belonged to the United States, and that it was entitled to transportation of its property at 50 per cent of the tariff rates on the aided lines first above referred to and to free transportation on those last mentioned, and found that it was not shown whether the railroad was informed as to the title to the property. It also found that in every instance the railroad made out and presented freight bills to the government for the net charges after making proper land-grant deductions, and that the payment of the full amount so claimed was made and accepted without protest.

The Supreme Court held the railroad was not entitled to recover. —C., M. & St. P. v. U. S. Decided March 2, 1925. Opinion by Mr. Justice Butler.

# Labor News

A wage increase of two cents an hour has been granted by the Atchison, Topeka & Santa Fe to its shop crafts employees on all lines.

## Labor Board Awards Increases in Pay to Dispatchers

The Railroad Labor Board has granted wage increases of from $5 to $15 a month to chief dispatchers and train dispatchers on seven railways. The increases were granted in a dispute between the American Train Dispatchers' Association representing the employees, and the Denver & Rio Grande Western, the Erie, the Kansas City Southern, the Minnesota & International, the Missouri-Kansas-Texas, the Northern Pacific, the Southern Pacific and the Wabash. The amounts of the increases ordered on the various roads are as follows: Denver & Rio Grande Western, $12.50, to train dispatchers; Erie, $5 a month, to chief, assistant chief and trick dispatchers; Kansas City Southern, $10 a month, to trick dispatchers; Minnesota & International, no increase; Missouri-Kansas-Texas, $10 a month, to chief, assistant chief and trick dispatchers; Northern Pacific, $15 a month, to chief, assistant chief and trick dispatchers; Southern Pacific, $15 a month, to assistant chief and trick dispatchers; Wabash, $10 a month, to assistant chief and trick dispatchers.

## Shop Crafts Co-operative Plan to Be Tried on the North Western

A plan for the co-operative operation of its shops, similar to that first tried on the Baltimore & Ohio, has been approved in an agreement between the Chicago & North Western and the Federated Shop Crafts. The North Western is the fourth railway to try the experiment, the Canadian National and the Chesapeake & Ohio having recently undertaken it.

Under the plan the management and the union agree to co-operate to improve service to the public, to share together any consequent benefit, and to perfect a definite administrative machinery to accomplish these purposes. The agreement reads in part:

"Aside from our mutual interest in the prosperity of the railway, one of the foremost benefits to the employees lies in the stability of employment, and the management is equally interested in the constant and efficient use of its shop facilities. Employees can without doubt bring to the attention of the management many points which will improve local conditions as to methods of planning and handling work in shops and roundhouses on Sundays and holidays and also promotion and co-operative attention to the welfare of the employees. These factors together with the economical use of time and forces, use of tools of the railway in the most advantageous manner, and performance of work by the minimum number of employees consistent with the various classes of work available will aid in the successful operation of the shops and repair facilities."

Conferences are to be held at local points where foremen and other local officers will meet with shop committeemen. It is expected that the first meeting will be held in the shops at Clinton, Iowa. The meetings are to be held on company time with the ranking officer of the railway or his representative acting as chairman of the joint committee. Subjects suggested for consideration are co-operation between departments; proper distribution, storage, and care of materials; increasing efficiency of tools and machines; disposition of scrap; most efficient method of handling engines through the shops; reclamation of usable material; condition of shops and shop grounds and arrangement of car repair tracks and tools. O. S. Beyer, Jr., consulting engineer of the Federated Shop Crafts, who assisted in the inauguration of the plan on the Baltimore & Ohio, will act in a consulting capacity to the union in the operation of the plan on the North Western.

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A BILL providing for the election of members of the Railroad Commission of California by the voters instead of their appointment as now by the governor, has passed through the committee and has been sent to the assembly without recommendation.

# Foreign Railway News

## Southern (England) Making Progress in Suburban Electrification

The Southern Railway (England) is making satisfactory progress on its electrification program in the London area, according to Modern Transport (London). A total of 248 track miles have already been electrified and work on an additional 399 track miles is in hand and will be completed early in 1926. A total of 850 new cars will be required for the new services and these are being delivered as the work progresses. The work will cost approximately £8,000,000.

## Slump in German Locomotive Building

The liberal investment of the German railways in new equipment during the inflation period is now being reflected in abnormally low orders for locomotives and other rolling stock by the railway board established under the Dawes plan, according to Commercial Attaché Herring, at Berlin. According to most observers the German railways at the end of 1923 were in excellent condition, apart from the abnormal deterioration under the Franco-Belgian Régie during the Ruhr occupation. There is, therefore, considerable uneasiness now in German rolling-stock plants because of the tendency of the railway administration to limit new orders drastically. Only 80 locomotives are to be ordered during the current year, and there will be a corresponding reduction in contracts for spare parts and other equipment, except material for track building.

The situation is not as serious as it might be, however, because such large companies as the Allgemeine Elektricitaets-Gesellschaft and the Borsig and Krupp works, which manufacture a large variety of products, are able to divert some of the labor employed in rolling-stock shops to other branches of their plants and otherwise adapt themselves to the situation. The fact remains, however, that even with reduced production, pressure on export markets will be greater, and there will doubtless be a more pronounced tendency to underbid American and foreign manufacturers—dumping German stock at sacrifice prices and compensating by price increases in lines where the domestic or foreign market, or both, is better able to absorb German goods.

The following table shows exports of German rolling stock during the past two years and in 1913:

EXPORTS OF GERMAN ROLLING STOCK

[In metric tons]

| Item | 1924 | | 1923 | | 1913 | |
|---|---|---|---|---|---|---|
| | Tons | Number | Tons | Number | Tons | Number |
| Tender locomotives: | | | | | | |
| Up to 10 metric tons | 933 | 137 | 1,593 | 227 | 3,526 | 547 |
| Over 10 metric tons | 8,388 | 274 | 4,936 | 257 | 26,936 | 709 |
| Locomotives without tenders | 5,812 | 104 | 8,016 | 124 | 19,677 | 359 |
| Locomotive tenders | 2,042 | 125 | 2,617 | 123 | 4,300 | 245 |
| Freight cars | 25,326 | 29,154 | 18,051 | 20,486 | 67,932 | 54,309 |
| Passenger cars | 4,314 | 276 | 2,251 | 324 | 4,745 | 707 |

## Miscellaneous Items

The following notes have been received by the Bureau of Foreign and Domestic Commerce from its agents in various countries:

The Polish government will order for its railways rolling stock to cost $7,000,000, including 4 locomotives, 3,000 freight cars and 100 passenger cars and $4,200,000 worth of rails, switches and signal apparatus. The railways will also spend $7,200,000 on improvements to car shops, for which considerable new material will be purchased.

A sum of $15,500,000 for improvement of railway facilities in the state of Sao Paulo has been voted by the government of that state, the money to be obtained by foreign loan.

Freight traffic on the Italian State Railways increased 19 per cent during the last six months of 1924 compared with the previous year. Earnings showed a gain of 250,000,000 lire, whereas on the basis of budget estimates an increase of only 192,000,000 lire was anticipated for the entire year.

A total of 700 passenger cars have been ordered from the Loechner Car Factory, Aix-la-Chapelle, on account of reparations to the Northern Railway of France.

# Equipment and Supplies

## Locomotives

KANSAS CITY, MEXICO & ORIENT.—See an item under freight cars.

THE CHILE EXPLORATION COMPANY has ordered 12 Mikado type locomotives from the Baldwin Locomotive Works.

## Freight Cars

P. J. CAMPION has ordered 4 dump cars from the American Car & Foundry Company.

THE LACLEDE STEEL COMPANY has ordered one 30-yard extension side dump car from the Clark Car Company.

THE DETROIT, TOLEDO & IRONTON has ordered 20, 30-yard extension side dump cars from the Clark Car Company.

BLISS DALLETT & COMPANY, New York, has ordered 4 gondola cars from the American Car & Foundry Company.

THE HOOKER ELECTRO CHEMICAL COMPANY has ordered 4, 30-ton tank cars from the American Car & Foundry Company.

THE GARY TUBE COMPANY is inquiring for 8 all-steel, side dump cars and 4 flat cars, all to be of 70 tons' capacity.

THE GRASSELLI DYESTUFF CORPORATION has ordered one 50-ton 6,000-gal. tank car from the American Car & Foundry Company.

THE AMERICAN SHEET & TIN PLATE COMPANY has ordered 2 30-yard extension side dump cars from the Clark Car Company.

BINGHAM & GARFIELD.—The Clark Car Company has just delivered 2, 30-yard extension side dump cars to the Bingham & Garfield.

THE STAUFFER CHEMICAL COMPANY has ordered one tank car of 8,000 gal. and 40 tons' capacity from the American Car & Foundry Company.

THE KANSAS CITY, MEXICO & ORIENT'S rehabilitation program includes the purchase of 350 box cars, 100 stock cars and 4 oil-burning locomotives.

THE FLORIDA EAST COAST is inquiring for 15 baggage cars. In the *Railway Age* of March 28, mention was made that the company would later ask for bids on this equipment.

UTAH COPPER COMPANY.—The Clark Car Company has just delivered to the Utah Copper Company 25 additional 30-yard extension side dump cars for heavy stripping service.

THE NEW YORK CENTRAL has ordered 100 air dump cars of 32 cu. yd. capacity from the Clark Car Company. Inquiry for this equipment was reported in the *Railway Age* of March 14.

THE CHICAGO & WESTERN INDIANA has ordered 280 steel center constructions for gondola cars from the Pullman Car & Manufacturing Corporation. Inquiry for this equipment was reported in the *Railway Age* of February 14.

THE NEW YORK CENTRAL has ordered 500 refrigerator cars of 35 tons' capacity from the Merchants Despatch Transportation Company; 200 for service on the New York Central and 300 on the Cleveland, Cincinnati, Chicago & St. Louis. Inquiry for this equipment was reported in the *Railway Age* of March 14.

THE MISSOURI PACIFIC has placed orders for repairs to 400 wooden gondola cars with the Sheffield Car & Equipment Company; 200 with the North American Car Company, Coffeyville, Kans., and repairs to 250 wooden box cars with the Pennsylvania Car Company. This is in addition to the contract for repairs to 400 gondola cars let to the American Car & Foundry Company as was reported in the *Railway Age* of March 28. The inquiry for prices on the repair of this equipment was reported in the *Railway Age* of January 24.

## Passenger Cars

PITTSBURGH & LAKE ERIE.—See New York Central.

CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS.—See New York Central.

THE CANADIAN NATIONAL is inquiring for five two-compartment observation sleeping cars.

THE BROOKLYN MANHATTAN TRANSIT contemplates buying 65 triplex articulated cars for rapid transit service.

THE CHICAGO, ROCK ISLAND & PACIFIC is reported to be contemplating the purchase of a number of passenger cars.

THE VIRGINIA & CAROLINA SOUTHERN has placed an order with the Edwards Railway Motor Car Company for one gasoline railway motor car and one trailer car.

THE NASHVILLE, CHATTANOOGA & ST. LOUIS has ordered 2 dining cars from the Pullman Car & Manufacturing Corporation. Inquiry for this equipment was reported in the *Railway Age* of February 14.

THE RICHMOND, FREDERICKSBURG & POTOMAC has ordered 6 passenger coaches from the Bethlehem Shipbuilding Corporation, Ltd. The inquiry for this equipment was reported in the *Railway Age* of March 14.

THE NEW YORK CENTRAL has ordered from the American Car & Foundry Company five 69-ft. steel baggage cars for the Cleveland, Cincinnati, Chicago & St. Louis and three 69-ft. steel baggage cars for the Pittsburgh & Lake Erie.

## Iron and Steel

THE CHICAGO & NORTH WESTERN has ordered 3,500 tons of structural steel for bridge work from the American Bridge Company.

THE CHESAPEAKE & OHIO has ordered 12,000 tons of rails from the Illinois Steel Company, 12,000 tons from the Inland Steel Company and 6,000 tons from the Bethlehem Steel Corporation.

## Machinery and Tools

THE PENNSYLVANIA has ordered one electric drop table from the Whiting Corporation.

THE CHICAGO, ROCK ISLAND & PACIFIC has placed an order for two 90-in. wheel quartering machines.

### FREIGHT CAR REPAIR SITUATION

| 1924 | Number freight cars on line | Cars awaiting repairs: Heavy | Light | Total | Per cent of cars awaiting repairs |
|---|---|---|---|---|---|
| January 1 | 2,279,363 | 118,653 | 39,522 | 158,175 | 6.9 |
| April 1 | 2,274,750 | 125,932 | 46,815 | 172,747 | 7.6 |
| July 1 | 2,279,826 | 144,912 | 49,957 | 194,869 | 8.5 |
| October 1 | 2,304,020 | 157,455 | 48,589 | 206,044 | 8.9 |
| January 1, 1925 | 2,293,487 | 143,962 | 47,017 | 190,979 | 8.3 |
| February 1 | 2,305,520 | 139,056 | 47,483 | 186,539 | 8.1 |
| March 1 | 2,313,092 | 141,192 | 43,855 | 185,047 | 8.0 |

| Month | Cars repaired: Heavy | Light | Total |
|---|---|---|---|
| December | 87,758 | 2,073,280 | 2,161,038 |
| March | 77,365 | 2,213,158 | 2,290,523 |
| June | 70,480 | 1,888,899 | 1,959,379 |
| September | 74,295 | 1,372,277 | 1,446,572 |
| December | 66,615 | 1,288,635 | 1,355,250 |
| January, 1925 | 69,084 | 1,358,308 | 1,427,392 |
| February | 66,283 | 1,313,088 | 1,379,371 |

*Data from Car Service Division Reports.*

THE NORTHERN PACIFIC is inquiring for one 48-in. car wheel borer, one quick cut saw, one combination arbor and straightening press and one drill pointer.

THE ILLINOIS STEEL COMPANY has ordered one 75-ton overhead crane from the Morgan Engineering Company and one 30-ton overhead crane from the Whiting Corporation.

THE ATCHISON, TOPEKA & SANTA FE is inquiring for one 36-in. by 36-in. by 14-ft. planer, one 4-ft. radial drill, one 5-ft. radial drill, two 2-in. double head bolt cutters, one pneumatic flue swedging machine of the single cylinder type and one pipe threading machine.

## Signaling

THE GULF, COLORADO & SANTA FE has ordered from the General Railway Signal Company an electric interlocking, 28 working levers, for installation at Fort Worth, Tex.

THE MICHIGAN CENTRAL has ordered from the Union Switch & Signal Company a Style "S-8" electro-mechanical interlocking four electric levers for application to an existing Saxby & Farmer machine at Schaefer Road, Detroit, Mich.

THE PACIFIC ELECTRIC is installing alternating current block signals on its line between Watts, California and Long Beach; 43 Style "N" three-color light signals, and various track circuit apparatus; all supplied by the Union Switch & Signal Company.

THE LOUISVILLE & NASHVILLE has ordered from the Union Switch & Signal Company materials to install Union two-speed continuous automatic train control between Madisonville, Tenn., and Corbin, Ky., 147 miles of lines. The contract includes automatic substation equipments and 26 locomotive equipments. This will be a continuation of the trial installation between Etowah and Madisonville. The construction work will be done by the railroad company's forces.

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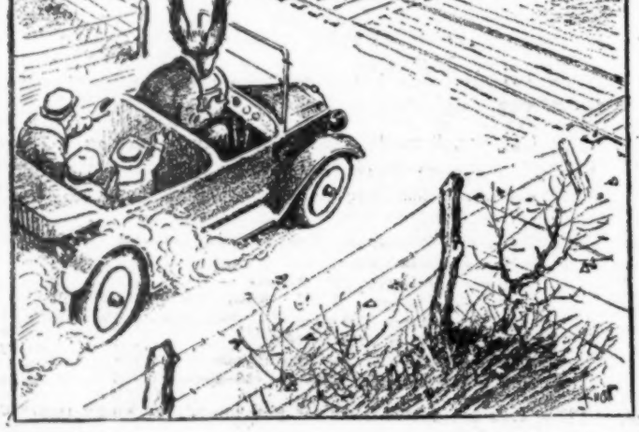
THE GENERAL ELECTRIC COMPANY reports that, in the year 1924, the company paid to 3,244 employees, $39,531 for suggestions made by the employees which had increased the efficiency of the company's operations. These payments range from one dollar to $1,000. In 1923 a somewhat smaller sum was paid out in the same way. In that year nearly one-quarter of the suggestions offered were accepted and in 1924 more than one-third were accepted.




*Dallas News*

# Supply Trade News

**The Chicago Pneumatic Tool Company** will construct a one-story addition to its plant at Los Angeles, Cal.

**The Midwest Forging Company,** Chicago Heights, Ill., has moved its principal business office to 38 South Dearborn street, Chicago.

**The Whiting Corporation,** Harvey, Ill., has opened a sales room at 997 Elliott Square, Buffalo, N. Y., and has appointed W. R. Hans district manager.

The East Chicago bar iron mill of the Republic Iron & Steel Company has been sold to **Briggs & Turivas,** scrap iron and steel, new and relaying rail brokers.

**Alfred W. Lockwood** has joined the sales organization of the **Bridgeport Brass Company,** Bridgeport, Conn., as a special representative, operating out of its New York office.

**W. W. Glosser** has been appointed general sales manager of the **Verona Tool Works,** Pittsburgh, Pa., and Frank B. Nimmo has been appointed assistant general sales manager.

**The National Carbon Company** has removed its emergency brush finishing plant from 237 East Forty-first street, New York City, to larger quarters at 357 West Thirty-sixth street.

**W. H. Ivers** has again become associated with the **Gold Car Heating & Lighting Company.** He will be located at St. Louis, Mo., and will represent the territory formerly represented by W. J. Roehl.

**The Elwell-Parker Electric Company,** Cleveland, Ohio, has appointed **J. P. Lyons,** 612 Citizens and Southern Bank building, Atlanta, Ga., its district engineer for the territory contiguous to Atlanta.

**William C. Wolfe** has been appointed district sales manager, welded and weldless division of the **American Chain Company, Inc.,** Bridgeport, Conn. Mr. Wolfe's headquarters are at 208 South La Salle street, Chicago. He succeeds George C. Isbester, resigned.

**The Gold Car Heating & Lighting Company,** New York, will be temporarily represented in the Chicago territory by **F. O. Bailey,** manager of sales, and **A. D. Stuyer** with address the same as heretofore; W. G. Willcoxson is no longer connected with the company.

**P. B. McGinnis,** mechanical expert of the Westinghouse Air Brake Company, with headquarters in Chicago, has resigned to become representative of the **Six Wheel Company,** Philadelphia, Pa., manufacturers of six-wheel automobile highway buses, with headquarters in Chicago.

**The Firth-Sterling Steel Company, E. S. Jackman & Co.,** agents, has moved its Los Angeles, Cal., office from 336 East Third street to larger quarters at 2154 Santa Fe avenue, Los Angeles. **William Ely Nelson,** who has been with the company almost 25 years, is Pacific Coast representative.

**Lyle Marshall,** former manager of the service department of the **Industrial Works,** Bay City, Mich., and later connected with the Chicago office, has been promoted to district sales manager in the newly opened office at 619 Dixie Terminal building, Cincinnati, Ohio. **James E. Shearer,** assistant sales manager, Bay City, Mich., has been transferred to New York.

**R. H. Chappel** has been elected treasurer and general manager of the **Standard Scale & Supply Corporation,** with general offices at Pittsburgh, Pa. This is a new corporation, which is entirely separate from the old Standard Scale & Supply Company, of Beaver Falls, now out of existence. The corporation manufactures railroad track and truck scales, narrow drum concrete mixers and also handles contractors' equipment in general. It has its own branch offices, warehouses and stores in Pittsburgh, New York, Philadelphia, Chicago and Cleveland.

# Railway Construction

ASHERTON & GULF.—Application has been made to the Interstate Commerce Commission for permission to construct an extension from Asherton, Tex., to Eagle Pass, a distance of 60 miles.

ATCHISON, TOPEKA & SANTA FE.—A contract has been awarded to the Union Bridge & Construction Company, Kansas City, Mo., for the construction of the substructure of the double track bridge across the Mississippi River, at Fort Madison, Iowa. The contract will amount to approximately $1,115,000.

BALTIMORE & OHIO.—A contract has been awarded to the Empire Construction Company, Baltimore, Md., for grading in connection with new tracks to be laid at Snowden, Pa., at an estimated cost of $40,000.

CENTRAL OF GEORGIA.—A contract has been awarded to Fairbanks, Morse & Company, Chicago, for the erection of a coaling station, to cost about $30,000, at Union Springs, Ala.

CHESAPEAKE & OHIO.—The contract for the construction of second track from Apex, Ohio, to Robbins, at a cost of $255,000, authorization for which was reported in the *Railway Age* of March 28, has been awarded to the Hunt-Forbes Company, Huntington, W. Va. The contract for the construction of third track from Russell, Ky., to Riverton, at a cost of $210,000, has been awarded to Haley, Norris & Chittum, Charlottesville, Va.

CHICAGO, BURLINGTON & QUINCY.—Bids will be closed on April 7 for the construction of a 9-stall addition to the roundhouse at Lincoln, Nev. Bids will be closed on April 10, for the construction of a passenger station at 5th Ave., La Grange, Ill., to cost approximately $30,000.

CHICAGO GREAT WESTERN.—Bids have been taken for the constructure of a coaling station at Bristow, Iowa.

DETROIT, TOLEDO & IRONTON.—Improvements to be constructed this year include second main track from Flat Rock, Mich., to Durban, a distance of approximately 16 miles, for which bids will be taken within a few weeks. In addition two reinforced concrete bridges will be constructed. Contracts for the grading of the cut-off from Durban, Mich., to Malinta, Ohio, a distance of 56 miles, will be awarded soon. Plans have been made for the construction of a 300-ft. reinforced concrete bridge over the Raisin river near Durban and for grade separation at Telegraph road, near Detroit.

INDIANA HARBOR BELT.—A contract has been awarded to the Railroad Water & Coal Handling Company, Chicago, for the laying of approximately one mile of ten-inch pipe line.

JEFFERSON SOUTHWESTERN.—The time when the new line under construction by this company must be completed has been extended to July 1, 1926, by the Interstate Commerce Commission.

KANSAS CITY, MEXICO & ORIENT.—The plans for the rehabilitation of the Orient include the construction of an office building and depot at Wichita, Kan., at a cost of $85,000, and passing tracks at several points along the line, to cost $67,000.

KANSAS CITY SOUTHERN.—The Interstate Commerce Commission has authorized the abandonment by this company of 1,400 ft. of track in Independence, Mo., and the construction of 690 ft. of track in that city.

KANSAS CITY TERMINAL.—A stores building and approximately one mile of switch track will be constructed by day labor at Kansas City, Mo., at a cost of $150,000.

MISSOURI PACIFIC.—Bids will be taken until April 6, for the construction of a frame passenger station, 22 feet by 117 feet, at Murphysboro, Ill.

MOBILE & OHIO.—Bids have been received for the construction of a one-story brick and stucco passenger station at Humboldt, Tenn., to be used jointly with the Louisville & Nashville.

NATCHEZ & SOUTHERN.—Plans are reported to have been prepared for the construction of a machine shop, enginehouse, locomotive repair facilities, and a thirty thousand gallon steel water tank at Natchez, Miss.

NEW YORK, PITTSBURGH & CHICAGO.—This company, incorporated in Pennsylvania on January 9, has applied to the Interstate Commerce Commission for a certificate authorizing the construction of a line from Allegheny to Easton, Pa., 283 miles, with a branch from Pittsburgh Junction to Pittsburgh, 30 miles, and one from Allegheny City to North Sewickley, 31 miles, making a total of 344 miles. The application states that the company has no relation at present to any other railroad and that it is proposed to reduce the distance between New York and Pittsburgh and provide a new low-grade route for through traffic between New York Harbor and the West which will avoid congestion and expedite the movement of traffic. It is proposed to cross the Susquehanna river about two miles north of Herndon. The company is represented by Henry O. Evans, Pittsburgh, and F. A. Molitor, of New York, is president.

OREGON, CALIFORNIA & EASTERN.—This company has applied to the Interstate Commerce Commission for authority for the construction of a line from the Sprague river to Silver Lake, Ore., 63 miles, with a 15-mile branch, and from the Sprague river to Lakeview, Ore., 65 miles.

READING.—Contracts have been awarded to O'Rourke Brothers, Norristown, Pa., and to the Benjamin Foster Company, Philadelphia, for grading and masonry and waterproofing, respectively, for two bridges south of Tripoli, Pa.

SEABOARD AIR LINE.—This company is reported to be contemplating the construction of an extension from Brooksville, Fla., to Inverness, a distance of approximately 20 miles.

SOUTHERN.—It is reported that bids are being taken for the construction of a second story addition to the freight and passenger station at Somerset, Ky., to cost $48,000.

SOUTHERN.—This company is reported to have made surveys recently for a new line in the Cincinnati district.

WICHITA FALLS & SOUTHERN.—This company is reported planning the construction of a two-story office building, 34 ft. by 60 ft., and a one-story freighthouse, 26 ft. by 60 ft., at Wichita Falls, Tex., the aggregate cost to be approximately $30,000.

## New York Moves to Abolish Crossings

The proposal to amend the constitution of the state of New York so as to permit the issuance of bonds to the extent of $300,000,000 for the purpose of separating grades at crossings of highways and railroads was approved by the legislature at its closing session last week, and later by the governor. This is the second approval by the governor and legislature; and the present action will bring the question before the voters of the state at the election next autumn. The fund would be used to pay the state's share in grade crossing elimination work and to make loans at low rates of interest to railways and municipalities for the same purpose.

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TWENTY-FOUR PULLMAN SLEEPING CARS.—This is the number of sleeping cars sent out each day from New York over the Pennsylvania Railroad, to points on the Southern Railway. This is an item in the Southern's announcement of the new "Crescent Limited" extra-fare train between New York and New Orleans which is to begin running on April 26. These 24 cars are divided among seven trains as follows:

12:45 a. m.—Birmingham, New Orleans, Columbus, Ga.
10:10 a. m.—Birmingham.
1:10 p. m.—Asheville (2), Augusta.
3:40 p. m.—Charlotte, N. C., Atlanta, New Orleans, (2), Macon, Columbus, Ga., New Orleans, Shreveport.
5:05 p. m.—Winston-Salem, N. C.
6:40 p. m.—Five cars for New Orleans.
8:40 p. m.—Knoxville, Nashville, Memphis.

These cars are operated all the year round, no winter-resort cars being included.

# Railway Financial News

BALTIMORE & OHIO.—*Bonds Sold.*—Kuhn, Loeb & Co., Speyer & Co., and the National City Company offered on Wednesday of this week $45,000,000 Baltimore & Ohio Southwestern Division 5 per cent mortgage bonds due July 1, 1950. The bonds were sold at 98 less interest accruing from date of payment to July 1, 1925, to yield 5.14 per cent to maturity.

These bonds are issued under the Southwestern Division First Mortgage of the Baltimore & Ohio, dated January 1, 1899, in extension of the 3½ per cent bonds for a like amount maturing on July 1, 1925, and the principal and interest at the rate of 3½ per cent per annum, are secured by the lien thereof. Because of the provisions of the refunding and general mortgage, the additional interest on these bonds will not be secured under the Southwestern Division first mortgage, but the company will agree in a supplemental indenture that in the event that it should hereafter place any new mortgage upon the property on which these bonds are a first lien as hereinafter stated, and on which the refunding and general mortgage bonds are also a lien, the additional 1½ per cent interest which these bonds bear is to be secured thereon by a lien prior to any bonds issued under such new mortgage.

These $45,000,000 bonds are secured through the deposit and pledge with the trustee of the mortgage of $45,000,000 first mortgage bonds and all the other funded indebtedness and all the stock of the Baltimore & Ohio Southwestern which owns the properties. The Baltimore & Ohio Southwestern Division bonds are thus in effect secured by a first lien on 910 miles of first main track, extending from the western approach of the bridge of the Baltimore & Ohio across the Ohio river at Belpre, Ohio, to and through Cincinnati and through Ohio, Indiana and Illinois to East St. Louis, Ill., a distance of 528 miles, together with branches or divisions connecting with the main line, comprising an additional 154 miles and 228 miles comprising the Springfield division extending from Shawneetown, Ill., to Beardstown, Ill., together with all extension, lands, buildings, appurtenances and other property, franchises, etc., all as described in the mortgage. This issue of bonds, constituting a closed mortgage, is thus outstanding at the rate of $49,450 per mile of first main track.

The bonds are not subject to redemption before July 1, 1945. All or any part of the bonds may be redeemed by the company on July 1, 1945, or any interest date thereafter on not less than three months previous notice, upon payment of their principal amount plus a premium of ½ per cent for each six months from the date of redemption to the date of maturity.

The sale of these bonds completes the financing of the Baltimore & Ohio's 1925 maturities. This issue is the third to be sold for this purpose. In May, 1924, there were sold $35,000,000 refunding and general mortgage 6 per cent bonds, Series C, and in August, 1924, $75,000,000 first mortgage 5 per cent bonds. About $20,000,000 of the former issue was available for refunding purposes. The latter issue was to refund a like amount of prior lien 3½ per cent bonds, due July 1, 1925. The Baltimore & Ohio now has no important maturities until 1929.

BANGOR & AROOSTOOK.—1924 *Earnings.*—Annual report shows income available for dividends in 1924 of $722,750 as compared with $594,911 in 1923. Selected items from the income statement follow:

BANGOR AND AROOSTOOK

| | 1924 | 1923 | Increase or decrease |
|---|---|---|---|
| Average mileage operated | 616 | 616 | |
| Railway Operating Revenues | $6,924,115 | $6,769,803 | $154,313 |
| Maintenance of way | $1,217,016 | $1,241,653 | —$24,643 |
| Maintenance of equipment | 1,586,408 | 1,432,680 | 153,727 |
| Transportation | 1,980,447 | 2,115,696 | —135,249 |
| Total operating expenses | $5,099,039 | $5,079,775 | $19,264 |
| Operating ratio | | | |
| Net revenue from operations | $1,825,076 | $1,690,028 | $135,048 |
| Railway tax accruals | 518,587 | 530,130 | —11,542 |
| Railway operating income | $1,305,130 | $1,158,344 | $146,786 |
| Gross income | $1,805,983 | $1,661,755 | $144,228 |
| Interest on funded debt | $1,045,175 | $1,042,719 | $2,456 |
| Total deductions from gross income | $1,083,233 | $1,066,844 | $16,389 |
| Net income | $722,750 | $594,911 | $127,839 |
| Divs on pref stock, 7 per cent | 243,600 | 243,600 | ..... |
| Divs on com stock, 5½ per cent | 221,950 | 221,950 | ..... |
| Surplus for year carried to profit and loss | ..... | ..... | ..... |

BOSTON & MAINE.—*Reorganization Plan Announced.*—The plan for reorganization of the financial structure of the Boston & Maine Railroad, revised after long conferences and now approved by the Board of Directors as promising "a great benefit to the corporation and all persons interested therein," was announced on March 31 by the General Readjustment Committee since the original announcement of the so-called Loring plan. With approval given also by a distinct committee of savings banks, insurance companies and investment banking houses, support of the reorganization by more than a majority of the bonds, preferred stock and common stock outstanding in the hands of the public is understood to be assured.

The problems of meeting heavy bond maturities in the next few years, and of raising large sums of new money needed for improvements and additions to the railroad, which the general readjustment committee says were felt to be impossible of advantageous solution under present conditions of the road's finances, will be met under the plan with "increased credit to the railroad, increased value to its securities, and better service to its patrons." The principal provisions of the plan are outlined in the committee's statement, as follows:

The extension for 15 years of $42,787,000 of general mortgage bonds, with interest unchanged until the present due dates, and at 5 per cent thereafter, the bonds being those issues maturing between 1925 and 1932 inclusive which are not held by the federal government;

The raising of $13,000,000 of new money by an issue of 7 per cent prior preference stock, to be offered primarily to existing stockholders of all classes in specified proportions and conditions, the dividends to be cumulative, with voting power share for share with all other classes, and priority both as to dividends and assets over all other classes; and

Concessions expected from the federal government on the $48,685,479 6 per cent bonds which it holds, all but $10,894,000 of which become due in the eight year period mentioned.

Explaining that it was felt that a unfication of the road's preferred stock was highly desirable, the plan provides that the outstanding first preferred stock, Classes A to E, shall be consolidated proportionately into one issue of 7 per cent preferred stock, with continued preferential dividends, and preference also as to assets which they do not now enjoy. The present preferred stock (6 per cent non-cumulative) will receive common stock, with provision that those subscribing to the new prior preference stock shall receive 15 per cent more than their present holdings. The outstanding common stock will receive new common stock, share for share, with the condition that those who fail to subscribe to the new prior preference stock shall receive less stock than those who do subscribe. This principle is applied to each class of stock, common and preferred, in varying degree.

The general readjustment committee, in its statement accompanying the plan, says that notwithstanding the fact that all classes of the road's security holders "are represented on the committee itself, it has conferred at length with other persons representative of the various classes, and has givn due weight to all suggestion so received. The committee earnestly believes that as a result of all those conferences and suggestions, and all this assistance, the plan as finally revised and now made public is fair to all persons in interest." The committee, which developed the revised plan after several months of deliberation and conferences, includes in its membership representatives of the board of directors of the railroad, and of all classes of security holders from various parts of New England.

"Taken in connection with the plan for abandonment of certain unprofitable branch lines," the statement adds, "this plan should enable the railroad properly to perform its public duties and to earn and pay a suitable return upon its outstanding securities."

Emphasizing the need for prompt consent, the statement says "the plan cannot succeed unless it is consented to by a large proportion of the stockholders and bondholders." The statement adds "It is hoped that both foreclosure and receivership may be avoided, but each is a possibility, either as a step hostile to the plan or as a necessary means of carrying it out, and the best way of escaping such an event would be to have the security holders approve the plan promptly in large numbers."

In its details, the plan establishes a relation between the bonds extended and the prior preference stock through provision that the bonds, which will be at 5 per cent interest after the present due dates, may be converted at par into this 7 per cent cumulative stock, after January 1, 1930 and before January 1, 1940. This conversion is limited to $7,500,000 a year for the first four years, but thereafter is unlimited. The bonds are subject to call after the first named date at 102 and accrued interest; and prior preference stock is subject to call as a whole but not in part, after the same date, at $110 a share and accrued dividends.

Describing the basis of subscription to the Prior Preference Stock, the plan says: "This present issue shall be offered to the existing stockholders in the proportions of $12 par value of prior preference stock for each share of first preferred stock now held, $15 par value of prior preference stock for each share of preferred stock now held, and $20 par value of prior preference stock for each share of common stock now held.

"It is hoped that the plan may be sufficiently advanced so that the first installment may be payable Oct. 1, 1925. Kidder, Peabody & Co., Lee, Higginson & Co. and Harris, Forbes & Co., have been requested to form a syndicate to assist in making the plan an assured success, and to underwrite any portion of the prior preference stock not taken by stockholders."

The adjustment of outstanding first preferred stock, Classes A, B, C, D, and E, by consolidation into one issue of 7 per cent Preferred stock, upon which the dividends shall be cumulative after July 1, 1927, and which carries provision also for possible recovery of one-half of the dividends now accumulated and unpaid, will be "in such amounts that each will receive the same preferential dividends as are called for by the shares now held, that is to say, for each seven shares now held,

Class A, present rate 5 per cent, will receive 5 new shares
Class B, present rate 8 per cent, will receive 8 new shares
Class C, present rate 7 per cent, will receive 7 new shares
Class D, present rate 10 per cent, will receive 10 new shares
Class E, present rate 4½ per cent, will receive 4½ shares."

Those holders of Classes A and E who do not subscribe to their share of the new Prior Preference stock "shall receive new shares at the above rates for only 85 per cent of their present holdings, present holders of Classes B and C who so fail to subscribe shall receive new shares at the

above rates for only 90 per cent of their present holdings, and present holders of Class D who so fail to subscribe shall receive new shares at the above rate for only 92 per cent of their present holdings.

"This new 7 per cent Preferred stock, unlike the outstanding First Preferred Stock, shall be preferred not only as to dividends, but also in liquidation to the extent of $100 per share."

The holders of outstanding 6 per cent non-cumulative preferred stock who subscribe for their share of the new prior preference stock "shall receive in Common stock 115 per cent of their present holdings of the preferred stock, but such holders who fail to so subscribe shall so receive in Common stock only 85 per cent of their present holdings. Holders of the outstanding Common stock who subscribe to their share of the new prior preference stock shall receive the same amount of common stock which they now hold, but such holders who fail to so subscribe shall receive in new stock only 60 per cent of their present holdings."

The general readjustment committee includes the following members: Charles Francis Adams, representing the voting trustees; E. B. Carney, treasurer, Lowell Institution for Savings, Lowell, Mass.; William Endicott, of Kidder, Peabody & Co.; Reginald Foster, vice-president, New England Mutual Life Insurance Co.; George A. Gaskill, president, Peoples Savings Bank, Worcester, Mass.; F. L. Higginson, Jr., of Lee, Higginson & Co.; W. Rodman Peabody (Chairman), James H. Hustis, Homer Loring and Harry G. Stoddard, all representing Directors of the Boston & Maine RR.; John R. Macomber of Harris, Forbes & Co.; Edward Milligan, president, Phoenix Insurance Co., Hartford, Conn.; Walter M. Parker, treasurer, Manchester Savings Bank, Manchester, N. H.; James L. Richards, Director, N. Y. N. H. & H. R. R. Co., and Ex. Gov. Rolland H. Spaulding of Rochester, N. H.

CHICAGO, MILWAUKEE & ST. PAUL.—*Views on Reorganization.*—F. J. Lisman, head of F. J. Lisman & Co., has outlined and given currency in the daily press his views as to what would be a logical solution of the St. Paul financial readjustment. Mr. Lisman believes that the preferred and common stocks may be assessed $20 a share and possibly more. He states his opinion that the reorganization will deal only with the Chicago, Milwaukee & Puget Sound 4 per cent bonds due 1949 of which $181,000,000 are outstanding and the general and refunding mortgage bonds outstanding as follows:

| | |
|---|---|
| European loan 4s, due June 1, 1925 | $11,903,780 |
| Gold 4s, due June 1, 1925 | 36,272,870 |
| Conv. 4½s, due 1932 | 49,980,800 |
| Debenture 4s, due 1934 | 33,286,000 |
| General and refunding 4½s, Series A, due 2014 | 43,089,000 |
| Convertible 5s, Series B, due 2014 | 29,129,800 |
| General 6s, Series Z, due 2014 | *66,829,000 |

*Held as collateral by the Government.

The order of the court appointing the receivers provided for the payment of all interest charges except those on the issues mentioned above.

The organization, Mr. Lisman says, must provide:

a. That the company can raise whatever new capital it needs now and from time to time hereafter, at the lowest possible market rate.
b. Provide a substantial amount of cash at once without increasing fixed charges.
c. Restore the respective equities of the securities which are to be disturbed.

In order to accomplish this, it will be necessary to foreclose the general and refunding and the Puget Sound mortgages and to exchange these bonds for a junior security, thereby enabling the new company to create a bond issue which will be a first mortgage on all of its lines west of the Missouri river, and a junior mortgage on the lines east thereof. The amount of this authorized new mortgage will undoubtedly be very substantial, so as to enable the company to obtain the necessary capital for many years. It might not be necessary to issue any of these bonds at once, because the money for immediate requirements should be raised by assessments on the stocks.

The general and refunding bonds will undoubtedly be exchanged for a security, the interest on which will depend on future earnings, most likely, into income bonds. The present refunding bonds are largely held by insurance companies, banks, etc., which do not like to receive stock; in fact, in some cases these institutions would be compelled to sell any stock which they would receive in exchange for their present bonds. Therefore income bonds are preferable.

All issues of general and refunding bonds will presumably be treated alike because under the terms of the mortgage they all rank equally in case of default. Holders will probably receive a new 5 per cent income bond, which may be cumulative after a period of from two to five years. The Puget Sound bonds may receive the same terms as the general and refunding bonds or possibly only 75 or 80 per cent in new income bonds and the balance in preferred stock. Just what constitutes fair treatment for Puget Sound bonds cannot be determined until the engineer's report is completed and thoroughly analyzed and until the matter of the contract for the purchase of electricity is thoroughly gone into.

### Stock Will be Assessed

The preferred and common stocks will certainly have to pay an assessment of not less than $20 per share and possibly more. The stocks themselves are not assessable but stockholders who do not pay an assessment may be wiped out by the foreclosure of the general and refunding mortgage. Unquestionably, some security will be given for the new money and it may be feasible to form a syndicate which will underwrite the amount of this assessment and that the stockholders who will not or cannot raise the money to pay the assessment may still receive a small amount of stock in the new company. This, however, is merely a possibility.

The question of what security the stockholders are to receive for the assessment is the most important. From a strictly legal point of view, the general and refunding mortgage bondholders, not having had their interest nor principal when due, are entitled to the entire equity. If the stockholders wish to maintain their equity it would only be fair if they merely receive a first preferred stock for the new money; in other words that the new money which the stockholders provide will only be entitled to receive a return after the general and refunding bonds have received interest on their investment. Matters of this kind are generally arranged by a compromise and it is quite likely that the stockholders may receive one-half in income bonds and one-half new preferred stock for whatever money they provide. No doubt upon payment of assessment the preferred and common stockholders of the present company will be reinstated as preferred and common stockholders in the new company.

### Owes Government $55,000,000

The matter of the government loan is of most interest. The order of court under which the receivers were appointed and are now acting, provides that the interest on the government debt shall be paid when due. This order may be changed. It does not seem just that the government should be paid $2,400,000 annually in interest, when other holders of the same kind of security do not receive any interest at all. Presumably when the bondholders' committee commences to function, it will petition the court to stop this preferential treatment. The government has been charging the company 6 per cent on money which costs it about 4¼ per cent, thereby making 1¾ per cent profit on this loan, or $962,500 per annum. This hardly seems fair when the loan was intended to help a needy corporation which was prevented by law from charging a rate sufficiently high to keep it out of bankruptcy. A bill was introduced in the closing session of the last Congress, to reduce the rate of interest to 4½ per cent; this would have saved the Chicago, Milwaukee & St. Paul $875,000 a year. This bill failed to pass. The Interestate Commerce Commission has no right under the law to reduce the rate of interest, though the treasury department would have a right to compromise the government claim. It is doubtful, however, if the treasury department would avail of this privilege for fear that someone in Congress would criticize the officials.

Possibly the best way for the reorganization committee to deal with the government would be as follows: To pay to the government interest only to the extent that the bonds which the government holds as collateral pay interest. Eighteen million dollars of general mortgage 5s so held would produce $900,000 a year, or about 1.62 per cent on the $55,000,000 loan. The government would have to wait for the remainder until the general and refunding bonds which presumably will be converted into income bonds, commence to pay. In due time the government would receive its interest—that is, it would get interest whenever the securities issued in exchange for the general and refunding bonds commence to pay a return. Assuming the value of 90 per cent for the $18,000 000 general mortgage 5s held by the government, the $66,829,000 general and refunding bonds form security for the remainder of the government loan on the basis of about 60 per cent against a market value of about 45 per cent leaving a deficiency of about $10,000,000. No doubt some compromise will be suggested but whether an agreement between the reorganization committee, the Interstate Commerce Commission, the director-general and the treasury department will receive the approval of Congress is another question.

The Chicago, Milwaukee & St. Paul is a magnificent property. The value of its physical assets is unquestionably in excess of its capitalization. It has been hurt to some extent by premature expansion and expensive construction of the Pacific Coast extension, but the principal causes for its financial difficulties really lie in the low rate structure in the Northwest; Panama Canal competition; a series of poor crops in its territory, especially in Montana where the company has a very large mileage; the competition of automobiles which has cut into its passenger and to some extent into its local freight business. With the growth of the country, the gradual adjustment of the rate structure and reduction in operating expenses, these difficulties will be overcome and we believe that in the course of time this great railroad will again bring a fair return on the money invested by its security holders.

CHOCTAW, OKLAHOMA & GULF.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon a line from Watonga to Homestead, Okla., 22 miles.

CINCINNATI, INDIANAPOLIS & WESTERN.—*Bonds Authorized.*—The Interstate Commerce Commission has granted authority for this company to issue $702,000 first mortgage 5 per cent bonds to be sold at not less than 75 per cent of par and accrued interest. Of this amount $614,000 covers capital expenditures previously made and $88,000 are bonds previously authorized and held in the company's treasury. Pending sale the company may pledge the bonds as security for short term notes.

DELAWARE & HUDSON.—1924 *Savings.*—Annual report issued this week in preliminary form shows for 1924 net corporate income of $5,817,376, equivalent to $13.69 per share on the company's stock. Net corporate income in 1923 totaled $4,711,699 equivalent to $11.08 per share. Selected items from the income statement follow:

DELAWARE & HUDSON

| | 1924 | 1923 | Increase or decrease |
|---|---|---|---|
| Railway operating revenues | $45,012,988 | $47,320,452 | —$2,307,464 |
| Maintenance of way | $5,328.910 | $4,414,384 | $914,526 |
| Maintenance of equipment | 12,200,672 | 13,114,203 | —913,531 |
| Transportation | 16,688,257 | 19,366,916 | —2,678,659 |
| Total operating expenses | $36,727,926 | $39,352,240 | —$2,624,314 |
| Operating ratio | 81.60 | 83.20 | —1.60 |
| Net revenue from operations | $8,285.062 | $7,968,212 | $316,850 |
| Railway tax accruals | $1,437,180 | $1,119,358 | $317,822 |
| Railway operating income | $9,196,608 | $8,050,165 | $1,146,443 |
| Hire of freight cars, Cr | $595,409 | $262,635 | $332,774 |
| Net railway operating income | $7,308,764 | $6.450,026 | $858,738 |
| Non-operating income | $5,862,629 | $5,333,461 | $529,167 |
| Gross income | $13,171,393 | $11,783,487 | $1,387,906 |
| Rent for leased roads | $1,855,034 | $1,843.810 | $11,223 |
| Interest on funded debt | 3,464,771 | 3,479,592 | —14,821 |
| Total deductions from gross income | $7,354,017 | $7,071,788 | $282,229 |
| Net income | $5,817,376 | $4,711,699 | $1,105,677 |
| Percentage earned on capital stock | 13.69 | 11.08 | 2.61 |
| Dividends on common stock | ..... | ..... | ..... |

DETROIT, BAY CITY & WESTERN.—*Sold.*—A. R. Mills, of Chicago, representing some of the largest creditors, was the only bidder for the property of the Detroit, Bay City & Western at the public sale at Bay City, Mich., on March 28. Various other persons representing wrecking concerns did not bid. The Mills bid was $200,000, the minimum price fixed by the Federal District Court, and it is subject to confirmation by the court on April 6. The company has been in the hands of receivers since September 29, 1922. The value of $200,000 agrees with the receiver's estimate of that amount as the salvage value of the property.

*Authorized to Abandon Line.*—The Interstate Commerce Commission has authorized the receiver of the Detroit, Bay City & Western to abandon operation of the property in a decision. The company's mileage is 98 and its lines extend from Bay City, Mich., to Port Huron. From January 1, 1920, to December 31, 1924, the company had operating revenues of $2,575,448 and a deficit in net railway operating income of $256,567. The road was reported to the commission to be in poor physical shape, and to have suffered severely from truck competition. The company has of late operated no passenger service. The territory which it reaches is served also by other carriers.

DETROIT, TOLEDO & IRONTON.—*Bonds.*—The Interstate Commerce Commission has authorized an issue of $1,181,000 of first mortgage 50-year 5 per cent gold bonds, to be sold at par and the proceeds used for construction purposes.

MAINE CENTRAL.—*Director Resigns.*—Edward P. Ricker, of Poland Springs, a director for many years and a member of the executive committee, has resigned.

MAINE CENTRAL.—1924 *Earnings.*—Annual report of Maine Central shows net available for dividends amounting to $389,022 equivalent to $12.96 a share on the $3,000,000, 5 per cent preferred stock. The sum of $300,000 was appropriated from net income for payment of accumulated dividends on preferred stock. Dividends on the preferred stock were restored in December, 1924. The balance transferred to profit and loss amounted to $51,522. The Maine Central's net income in 1923 totaled $10,464. Selected items from the income account follow:

MAINE CENTRAL

| | 1924 | 1923 | Increase or decrease |
|---|---|---|---|
| Average mileage operated | 1,208 | 1,201 | 7 |
| Railway operating revenues | $20,178,336 | $21,192,264 | —$1,013,928 |
| Maintenance of way | $3,251,444 | $3,329,873 | —$78,429 |
| Maintenance of equipment | 3,939,243 | 4,137,633 | —198,390 |
| Transportation | 8,489,031 | 9,531,741 | —1,042,711 |
| Total operating expenses | $16,528,552 | $17,843,124 | —$1,314,572 |
| Operating ratio | 81.92 | 84.20 | —2.28 |
| Net revenue from operations | $3,649,785 | $3,349,141 | $300,644 |
| Railway tax accruals | 1,216,287 | 1,182,489 | 33,797 |
| Railway operating income | $2,428,548 | $2,162,465 | $266,083 |
| Equipment rents, net Cr. | $199,624 | Dr. $64,376 | $264,000 |
| Joint facility rents, net Dr. | 320,491 | 114,948 | 206,543 |
| Net railway operating income | $2,307,681 | $1,983,142 | $324,539 |
| Non-operating income | 241,256 | 189,195 | 52,061 |
| Gross income | $2,548,937 | $2,172,336 | $376,601 |
| Rent for leased roads | $912,896 | $905,591 | $7,305 |
| Interest on funded debt | 1,183,442 | 1,139,701 | 43,741 |
| Total deductions from gross income | $2,159,915 | $2,161,872 | —$1,957 |
| Net income | $389,022 | $10,464 | $378,558 |
| Reserve for accumulated pref. dividends | $300,000 | ..... | ..... |
| Dividends on preferred stock | ..... | ..... | ..... |
| Dividends on common stock | 37,500 | ..... | ..... |
| Surplus for year carried to profit and loss | $51,522 | $6,180 | $45,342 |

MARQUETTE, HOUGHTON & ONTONAGON.—*Bond Extension.*—The Interstate Commerce Commission has authorized the Duluth, South Shore & Atlantic and the Marquette, Houghton & Ontonagon to enter into an agreement with the holders of $1,400,000 6 per cent 40-year mortgage bonds of the latter for the extension of the maturity date of the bonds from April 1, 1925, until April 1, 1935; for the issue by the M. H. & O. of interest coupons for the extended period, and for the guaranty of the payment of such coupons by the D. S. S. & A. The Duluth, South Shore & Atlantic purchased the M. H. & O. in 1890 and, by the terms of the purchase, the South Shore agreed to assume the payment of the bonds of the subsidiary company.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—*Equipment Trust.*—This company has applied to the Interstate Commerce Commission for authority for an issue of $400,000 of equipment trust certificates.

MOFFAT TUNNEL.—*Bonds Offered.*—R. M. Grant & Co., Inc., of New York, have sold $2,500,000 5½ per cent general obligation bonds of the Moffat Tunnel District at prices to yield 4.55 per cent. The bonds mature $250,000 each on January 1, of the years 1964 to 1973. They are dated January 1, 1925. These bonds are direct general obligations of the entire district, and are doubly secured by taxation to be derived for services through the tunnel, which it is estimated will be sufficient to pay all operating charges, upkeep and interest and principal of all bonds of the district including this issue, making it a self-supporting public improvement.

The Moffat Tunnel Improvement District was organized under an act of the legislature of Colorado, as a political subdivision of that state for the construction of a tunnel through the Continental Divide, which is to "be used for standard gauge railroads, telegraph and telephone lines, the transmission of power and the transportation of water, automobiles and other vehicles . . . without monopoly by any use, person or corporation."

MONTOUR.—*Excess Income.*—The Interstate Commerce Commission has announced hearings on October 5, 1925, with reference to the reason why this carrier has reported no excess earnings for recapture. The company reported a property investment as of December 31, 1923, of $8,132,481. In 1923 its net railway operating income totaled $871,081.

NATIONAL STEEL CAR LINES COMPANY.—*Equipment Trust.*—Freeman & Co., the New York Trust Company and S. M. Vockel & Co. of Pittsburgh, offered on Thursday $3,800,000, 6 per cent equipment trust certificates, series G, to be issued under the Philadelphia plan. Principal and interest are guaranteed by the Standard Tank Car Company. The certificates are secured by 2,757 steel tank cars. They mature semi-annually from November 1, 1926, to November 1, 1935, and were sold to yield 5.30 to 6.05 per cent.

NEW ORLEANS, TEXAS & MEXICO.—*Bonds Sold.*—Kuhn, Loeb & Co. have sold $4,733,000 first mortgage gold bonds due April 1, 1954. Of these, $3,752,000 series A, 5½ per cent bonds were sold at 99½ and accrued interest and $981,000 series B, 5 per cent bonds were sold at 92¼ and accrued interest, both yielding 5.53 per cent if held to maturity.

These bonds are to be issued under the first mortgage of the company, dated April 1, 1924, which is a first lien, either directly or through pledge of all outstanding securities of subsidiary companies, on approximately 979 miles of railroad, with its appurtenances, including two ferry boats and the facilities used in the operation of the ferry over the Mississippi river at Anchorage, La., on real estate of an estimated value exceeding $3,000,000 and on equipment having a book value, after depreciation, as of December 31, 1924, of approximately $7,750,000.

The proceeds of the bonds will be used to reimburse the treasury of the company in part for the cost of additions, betterments and new properties and equipment paid for out of income and for other corporate purposes.

The company had outstanding as of March 23, 1925 (including the new bonds, but excluding old first mortgage bonds, due in October, 1925, the mortgage securing which has been released and funds to pay principal and interest of which are deposited with Irving Bank-Columbia Trust Company), $14,270,000 principal amount first mortgage 5½ per cent gold bonds, Series "A," $7,797,000 principal amount first mortgage 5 per cent gold bonds, Series "B," and $5,703,000 principal amount 5 per cent bonds, due in 1935, secured under the first mortgage ratably with the first mortgage bonds issued thereunder.

The amount of bonds secured by the first mortgage to be presently outstanding will accordingly be $27,770,000 or at the rate of only about $28,365 per mile of railroad covered by the mortgage as a first lien either directly or through the pledge of all outstanding securities of subsidiary companies.

The amount of bonds which may be issued under the first mortgage is limited to $50,000,000 and, in addition, the amount of bonds at any time outstanding, together with bonds reserved for refunding, may not exceed three times the par amount of capital stock at the time outstanding. Of the bonds remaining unissued, $5,703,000 are reserved to refund or retire the outstanding 5 per cent bonds, due in 1935, and the remainder may be issued only in respect of the acquisition of new properties or securities representative thereof, or for extensions, betterments and improvements chargeable to capital account, or for the acquisition of equipment (but only to the extent of 80 per cent of the cost thereof). A sinking fund of 5 per cent per annum for 20 years is provided in respect of bonds issued for equipment expenditures.

NEW YORK, CHICAGO & ST. LOUIS.—*Pere Marquette Stockholders Approve.*—Stockholders of the Pere Marquette, at their special meeting at Columbus, Ohio, on March 29, voted approval of the lease of that company to the new Nickel Plate system by a vote of 90,665 shares in favor to 15,890 against. A group of minority

stockholders has filed a petition in the court of common pleas to enjoin the road from entering into the merger.

*Injunction Proceedings.*—Judge William A. Moncure ruled in Chancery Court on March 26 that the Chesapeake & Ohio Railway Company might hold its stockholders' meeting March 30, but that the proposed lease of the railway to the new Nickel Plate System must not be executed, even in case of Interstate Commerce Commission approval, until the court decides definitely whether the corporation has power under the Virginia statutes to enter into such an agreement.

The ruling was upon the petition of minority stockholders for an injunction to prevent the stockholders from approving the lease. The judge said that his decision should not be considered final, since he had not had time to examine all of the authorities quoted. His tentative opinion was predicated upon the assurance of Chesapeake & Ohio counsel, that no effort would be made to execute the lease until a final decision upon the matter had been entered. If the final decision confirms in substance the opinion, the validity of the lease must be tested in the Chancery Court.

George Cole Scott, chairman of the Richmond Stockholders' Protective Committee, is quoted as having said that his committee was gratified with the judge's decision.

The claim of the committee is that the original charter of the company, having no provision for lease of all of the company's properties, cannot be amended under any law subsequently passed by the legislature of Virginia so as to authorize the making of a lease without the unanimous consent of stockholders.

*Chesapeake & Ohio Stockholders Approve.*—At the stockholders' meeting in Richmond on March 30, stockholders voted in favor of the lease of their property to the new Nickel Plate system by a vote of 506,542 in favor to 152,918 against. The vote in favor represented 60 per cent of the stock outstanding, the vote against 19 per cent and 21 per cent was not voted. The stockholders also voted to approve the lease of the Hocking Valley, of which the Chesapeake & Ohio owns control, to the Nickel Plate system.

The meeting was a stormy one. It was called to order at 11 a. m. Monday. W. J. Harahan, president of the Chesapeake & Ohio, was elected chairman of the meeting. Newton D. Baker, former secretary of war and now counsel for the Van Sweringens, was elected commissioner of election, with three assistants. Protests that the minority interests should be represented on this committee were over-ruled. The committee began immediately to examine proxies and the meeting was adjourned until 12:15 p. m. Difficulties of this task required subsequently that the meeting be adjourned until 3:00 p. m. At that time it was adjourned until 10:30 a. m. on Tuesday. It finally adjourned at 12:45 p. m. after having been in session 26 hours.

Stockholders of all the railroads concerned have now approved the lease of their properties to the new Nickel Plate system. Hearings on the merger before the Interstate Commerce Commission begin on April 15.

SANTA FE NORTHWESTERN.—*Operation.*—This company has applied to the Interstate Commerce Commission for authority to operate a line from Bernalillo to San Ysidro, N. M., 42.5 miles.

SEABOARD AIR LINE.—Bonds.—This company has applied to the Interstate Commerce Commission for authority for the authentication and delivery of $2,750,000 of refunding mortgage 4 per cent gold bonds to be pledged under the first and consolidated mortgage, and of $1,025,500 of first and consolidated mortgage 6 per cent gold bonds to be pledged as collateral for short term notes.

SOUTHERN PACIFIC.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for authority to acquire and operate 2½ miles of the California Railway, extending south of East Fourteenth street, Oakland, Calif.

SOUTHERN PACIFIC.—*Acquisition of San Antonio & Aransas Pass Approved.*—The Interstate Commerce Commission has approved the acquisition by the Southern Pacific Company of the entire capital stock of the San Antonio & Aransas Pass and the lease of the latter to the Galveston, Harrisburg & San Antonio, a Southern Pacific subsidiary.

Prior to 1903 the Southern Pacific owned all of the stock of the S. A. & A. P. and had guaranteed payment of the principal and interest on $17,544,000 of its 50-year 4 per cent bonds, dated January 1, 1893. By force of a decree of the district court of Travis County, Tex., rendered December 14, 1903, the Southern Pacific was enjoined from owning any of the stock of the S. A. & A. P. so long as it owned or controlled any of the stock of the Galveston, Harrisburg & San Antonio, and, accordingly, the Southern Pacific disposed of its interests in the S. A. & A. P., but its liability as guarantor of the principal and interest on the bonds has continued. The record shows that the S. A. & A. P. has incurred an average annual net deficit of $965,370 during the 10-year period 1914 to 1923, inclusive, and up to September 30, 1924, was indebted to the Southern Pacific for $9,263,012 interest paid under the guaranty plus interest of $4,823,771, a total of $14,086,783. The Southern Pacific contended that the placing upon it of this burden of financial responsibility and expense, without control by it of the S. A. & A. P., is in conflict with the best interest of the public.

The S. A. & A. P. has outstanding 10,000 shares of common stock of the par value of $100 per share. The Southern Pacific has entered into an agreement with Kuhn, Loeb & Co., for the purchase of 9,854 shares of this stock for $236,560, with interest at 6 per cent from June 17, 1924. The Southern Pacific stated that control and operation of the S. A. & A. P. by one of its subsidiaries will result in savings that will substantially contribute to or perhaps entirely meet the annual expense incurred from payment of interest on the bonded debt of the S. A. & A. P. It was also contended that the service given by the S. A. & A. P. would be materially improved.

SOUTHERN RAILWAY.—*Suit for Preferred Dividends.*—Hearings in the suit by the preferred stockholders for back dividends alleged to be due were begun before Judge Beverly T. Crump in the Law and Equity Court at Richmond, Va., last week. The suit is being brought by the plaintiffs, which are the Norwich Water Power Co., W. H. Langhorne, State & City Bank & Trust Co., L. R. Page and others. Counsel for the preferred stockholders said that in 1907, 1908, 1909, 1910, 1915, 1916, 1917 and 1921, the $5 dividends on the preferred were earned but not paid. They declared that the contention of the railway company that dividends were non-cumulative did not hold true in any year when the full amount is earned.

The back dividends amount to $29,000,000. The hearings lasted two days and 15 days were allowed for the preparation of briefs.

WABASH.—1924 *Earnings.*—Annual report issued this week shows for 1924 corporate income of $5,474,949 equivalent after allowance for 5 per cent dividends on the preferred A and preferred B stock to $2.77 a share on the common. Net earnings in 1923 totaled $5,410,873 equivalent after allowance for preferred dividends to $2.64 per share on the common. Selected items from the income statement follow:

WABASH

| | 1924 | 1923 | Increase or decrease |
|---|---|---|---|
| Average mileage operated | 2,490 | 2,477 | 13 |
| Railway operating revenues | $65,780,929 | $66,617,636 | —$836,707 |
| Maintenance of way | $9,913,565 | $9,501,515 | $412,050 |
| Maintenance of equipment | 11,579,914 | 13,884,271 | —2,304,358 |
| Transportation | 24,973,374 | 24,997,690 | —24,316 |
| Total operating expenses | $50,298,418 | $52,033,495 | —$1,735,077 |
| Operating ratio | 76.46 | 78.11 | —1.65 |
| Net revenue from operations | $15,482,512 | $14,584,142 | $898,370 |
| Railway tax accruals | 3,036,367 | 2,470,800 | 565,567 |
| Railway operating income | $12,431,963 | $12,096,957 | $335,006 |
| Hire of freight cars, Dr. bal. | $1,852,217 | $1,751,073 | $101,144 |
| Joint facility rents, Dr. | 1,184,191 | 1,250,650 | —66,459 |
| Net railway operating income | $9,347,780 | $8,997,401 | $350,379 |
| Non-operating income | 530,392 | 660,621 | —130,229 |
| Gross income | $9,878,172 | $9,658,022 | $220,150 |
| Rent for leased roads | $365,251 | $296,528 | $68,723 |
| Interest on funded debt | 3,953,703 | 3,860,183 | 93,520 |
| Total deductions from gross income | $4,403,223 | $4,247,148 | $156,075 |
| Net income | $5,474,949 | $5,410,874 | $64,076 |

## Dividends Declared

Baltimore & Ohio—Common, 1¼ per cent, quarterly; preferred, 1 per cent, quarterly; both payable June 1 to holders of record April 18.

Belt R. R. & Stock Yards, Ind.—Common, 2 per cent, quarterly; preferred, 1¼ per cent, quarterly; both payable April 1.

Delaware, Lackawanna & Western.—$1.50, quarterly, payable April 20 to holders of record April 4.

## Trend of Railway Stock and Bond Prices

| | March 31 | Last Week | Last Year |
|---|---|---|---|
| Average price of 20 representative railway stocks | 76.87 | 77.31 | 63.07 |
| Average price of 20 representative railway bonds | 89.44 | 90.01 | 84.88 |

# Annual Report

# Norfolk and Western Railway Company

## TWENTY-NINTH ANNUAL REPORT

ROANOKE, VA., March 24th, 1925.

*To the Stockholders of the Norfolk and Western Railways*

Your Board of Directors submits the following report for the year ending December 31st, 1924:

### Mileage of Road and Track in Operation

| | December 31st, 1924 Miles | December 31st, 1923 Miles | Increase Miles |
|---|---|---|---|
| Main Line | 1,542.69 | 1,542.69 | |
| Branches { Operated as second track | 127.28 | 127.28 | |
| Branches { Other branches | 533.57 | 533.28 | |
| | 660.85 | 660.56 | .29 |
| Total miles | 2,203.54 | 2,203.25 | .29 |
| Lines operated under lease | 21.03 | 21.03 | |
| Lines operated under trackage rights | 15.60 | 15.60 | |
| Total miles of road in operation | 2,240.17 | 2,239.88 | .29 |
| Second track | 576.68 | 556.40 | 20.28 |
| Third track | 13.58 | 13.58 | |
| Sidings and yard tracks | 1,535.74 | 1,528.19 | 7.55 |
| Total miles of all tracks in operation | 4,366.17 | 4,338.05 | 28.12 |
| Average miles of road operated | 2,240.69 | 2,238.29 | 2.40 |
| Average miles of track operated | 4,343.22 | 4,338.57 | 4.65 |

The increase in miles of road in operation was as follows:

| | | |
|---|---|---|
| Coal Creek Branch Extension | 1.77 Miles | |
| Kenova Belt Line Extension | 1.06 Miles | |
| | 2.83 Miles | |
| Crimora Ore Branch removed | 2.54 Miles | |
| Net Increase | .29 Miles | |

### Income Statement

| | 1924 | 1923 | Increase or Decrease | Per Cent. |
|---|---|---|---|---|
| OPERATING INCOME: | | | | |
| Operating Revenues: | | | | |
| Freight | $81,684,817.95 | $81,321,868.14 | Inc. $362,949.81 | .45 |
| Passenger | 8,972,056.97 | 10,301,245.91 | Dec. 1,329,188.94 | 12.90 |
| Mail | 1,161,923.09 | 989,497.35 | Inc. 172,425.74 | 17.43 |
| Express | 1,118,992.21 | 1,237,913.22 | Dec. 118,921.01 | 9.61 |
| All Other Transportation | 581,049.65 | 578,610.39 | Inc. 2,439.26 | .42 |
| Incidental and Joint Facility Revenue | 1,061,834.37 | 1,162,547.34 | Dec. 100,712.97 | 8.66 |
| Total | $94,580,674.24 | $95,591,682.35 | Dec. $1,011,008.11 | 1.06 |
| *Revenue from Interline Business for December: | | | | |
| Freight | $3,108,666.76 | ..... | Inc. $3,108,666.76 | ... |
| Passenger | 17,969.15 | ..... | Inc. 17,969.15 | ... |
| Total | $97,707,310.15 | $95,591,682.35 | Inc. $2,115,627.80 | 2.21 |
| Operating Expenses. | | | | |
| Maintenance of Way and Structures | $14,801,043.80 | $12,408,975.49 | Inc. $2,392,068.31 | 19.28 |
| Maintenance of Equipment | 22,796,839.42 | 25,140,609.49 | Dec. 2,343,770.07 | 9.32 |
| Traffic | 1,054,805.39 | 991,805.30 | Inc. 63,000.09 | 6.35 |
| Transportation | 29,217,013.26 | 31,997,613.83 | Dec. 2,780,600.57 | 8.69 |
| Miscellaneous Operations | 288,092.22 | 306,382.18 | Dec. 18,289.96 | 5.97 |
| General | 2,012,582.29 | 1,869,052.28 | Inc. 143,530.01 | 7.68 |
| *Transportation for Investment—Credit* | *295,267.82* | *115,567.66* | *Inc. 179,700.16* | *155.49* |
| Total | $69,875,108.56 | $72,598,870.91 | Dec. $2,723,762.35 | 3.75 |
| Ratio of Expenses to Total Operating Revenues exclusive of December interline business | 73.88% | 75.95% | Dec. 2.07% | ... |
| Net Revenue from Operations | $27,832,201.59 | $22,992,811.44 | Inc. $4,839,390.15 | 21.05 |
| Tax Accruals | $7,400,000.00 | $6,225,000.00 | Inc. $1,175,000.00 | 18.88 |
| Uncollectible Revenue | 13,539.37 | 26,172.45 | Dec. 12,633.08 | 48.27 |
| Total Operating Income | $20,418,662.22 | $16,741,638.99 | Inc. $3,677,023.23 | 21.96 |
| NON-OPERATING INCOME: | | | | |
| Hire of Freight Cars—Net | $1,726,291.46 | $3,003,995.37 | Dec. $1,277,703.91 | 42.53 |
| Hire of Other Equipment—Net | 17,628.58 | 4,407.96 | Inc. 13,220.62 | 299.93 |
| Joint Facility Rents—Net | 300,787.18 | 258,823.76 | Inc. 41,963.42 | 16.21 |
| Total | $2,044,707.22 | $3,267,227.09 | Dec. $1,222,519.87 | 37.42 |
| NET RAILWAY OPERATING INCOME | $22,463,369.44 | $20,008,866.08 | Inc. $2,454,503.36 | 12.27 |
| OTHER NON-OPERATING INCOME: | | | | |
| Income from Lease of Road | $1,110.00 | †$1,025,519.00 | Dec. $1,024,409.00 | 99.89 |
| Miscellaneous Rent Income | 79,282.97 | 72,580.59 | Inc. 6,702.38 | 9.23 |
| Miscellaneous Non-Operating Physical Property | 147,276.53 | 41,089.09 | Inc. 106,187.44 | 258.43 |
| Dividend Income | 6,598.66 | 5,047.32 | Inc. 1,551.34 | 30.74 |
| Income from Funded Securities | 622,931.17 | 575,280.45 | Inc. 47,650.72 | 8.28 |
| Income from Unfunded Securities and accounts | 219,494.59 | †1,855,592.05 | Dec. 1,636,097.46 | 88.17 |
| Miscellaneous Income | 6,529.68 | 29,101.68 | Dec. 22,572.00 | 77.86 |
| Total | $1,083,223.60 | $3,604,210.18 | Dec. $2,520,986.58 | 69.95 |
| GROSS INCOME | $23,546,593.04 | $23,613,076.26 | Dec. $66,483.22 | .28 |
| DEDUCTIONS FROM GROSS INCOME: | | | | |
| Rent for Leased Roads | $103,805.48 | $102,306.65 | Inc. $1,498.83 | 1.47 |
| Miscellaneous Rents | 1,754.70 | 1,453.70 | Inc. 301.00 | 20.71 |
| Interest on Funded Debt: | | | | |
| Mortgage Bonds | 3,605,370.67 | 3,589,600.00 | Inc. 15,770.67 | .44 |
| Convertible Bonds | 495,305.00 | 713,142.00 | Dec. 217,837.00 | 30.55 |
| Equipment Obligations | 963,346.38 | 319,870.87 | Inc. 643,475.51 | 201.17 |
| Interest on Unfunded Debt | 20,729.46 | 33,232.26 | Dec. 12,502.80 | 37.62 |
| Miscellaneous Income Charges | 112,933.31 | 64,973.90 | Inc. 47,959.41 | 73.81 |
| Total | $5,303,245.00 | $4,824,579.38 | Inc. $478,665.62 | 9.92 |
| NET INCOME | $18,243,348.04 | $18,788,496.88 | Dec. $545,148.84 | 2.90 |
| Dividends on Adjustment Preferred Stock | 919,692.00 | 919,692.00 | .... ..... | .... |
| INCOME BALANCE: Transferred to Profit and Loss | $17,323,656.04 | $17,868,804.88 | Dec. $545,148.84 | 3.05 |

† Include payments in connection with settlement with United States Railroad Administration.

* NOTE:—It has been the Company's practice for many years to include in its figures of Operating Revenues for each month the revenue from local business for that month and the revenue from interline forwarded and received business for the preceding month. Under a recent order of the Interstate Commerce Commission, it was necessary, beginning with December, 1924, to include the revenue from interline business in the figures for the month in which it was earned. Figures for the year 1924, therefore, include the revenue from interline business for the thirteen months December, 1923, to December, 1924, inclusive. See also page 15.

### Profit and Loss Statement

| | 1924 | 1923 | Increase or Decrease | Per Cent. |
|---|---|---|---|---|
| CREDITS: | | | | |
| Balance January 1st | $44,448,882.45 | $37,276,019.65 | Inc. $7,172,862.80 | 19.24 |
| Credit Balance from Income | 17,323,656.04 | 17,868,804.88 | Dec. 545,148.84 | 3.05 |
| Repayment by Pocahontas Coal & Coke Company Advances for Mortgage Bond Interest | 234,000.00 | 70,000.00 | Inc. 164,000.00 | 234.29 |
| Donations for Construction of Sidings | 56,436.59 | 114,844.69 | Dec. 58,408.10 | 50.86 |
| Adjustment of Equipment Retired and Materials and Supplies in settlement with U. S. Railroad Administration | ..... | 947,427.02 | Dec. 947,427.02 | ..... |
| Profit on sale of U. S. Liberty Bonds | ..... | 187,572.15 | Dec. 187,572.15 | ..... |
| Adjustment of Discount on Divisional First Lien and General Mortgage Bonds | ..... | 476,417.78 | Dec. 476,417.78 | ..... |
| Miscellaneous Credits | 40,790.38 | 62,638.72 | Dec. 21,848.34 | 34.88 |
| TOTAL | $62,103,765.46 | $57,003,724.89 | Inc. $5,100,040.57 | 8.95 |
| CHARGES: | | | | |
| Dividend Appropriations of Surplus, Common Stock | $10,608,539.00 | $10,327,616.50 | Inc. $280,922.50 | 2.72 |
| Surplus Appropriated for Investment in Physical Property | 56,436.59 | 114,844.69 | Dec. 58,408.10 | 50.86 |

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| | | | | | |
|---|---|---|---|---|---|
| Loss on Retired Road and Equipment ... | 300,197.20 | 142,822.32 | Inc. | 157,374.88 | 110.19 |
| Adjustment on Account of Final Settlement with U. S. Government for the Guaranty Period—March to August, 1920, inclusive.... | 3,728,210.39 | ..... | Inc. | 3,728,210.39 | ..... |
| Account of "Over" Maintenance in Settlement with U. S. R. R. Administration ..... | ..... | 1,749,446.58 | Dec. | 1,749,446.58 | ..... |
| Premium paid in redemption of Equipment Trust No. 54 | ..... | 165.240.00 | Dec. | 165,240.00 | ..... |
| Miscellaneous Debits. | 48,844.22 | 54,872.35 | Dec. | 6,028.13 | 10.99 |
| TOTAL ..... | $14,742,227.40 | $12,554,842.44 | Inc. | $2,187,384.96 | 17.42 |
| Balance, December 31st. ..... | $47,361,538.06 | $44,448,882.45 | Inc. | $2,912,655.61 | 6.55 |

## Capital Stock

The aggregate amounts of Adjustment Preferred and Common capital stock authorized and issued, including 77 shares ($7,700) of Adjustment Preferred stock and 24 shares ($2,400) of Common stock held in the Company's treasury, were as follows:

| | | Issued | |
|---|---|---|---|
| | Authorized | Par Value | Shares |
| Adjustment Preferred Stock..... | $23,000,000 | $23,000,000 | 230,000 |
| Common Stock ..... | 250.000,600 | 134.796,700 | 1,347,967 |
| Totals, December 31st, 1924.... | 273.000.000 | 157,796,700 | 1,577,967 |
| Totals, December 31st, 1923.... | 273,000,000 | 151,996,700 | 1,519,967 |
| Increase (all Common Stock).... | ..... | $5,800,000 | 58,000 |

## Funded Debt

The aggregate Funded Debt actually outstanding was as follows:

| | Dec. 31st, 1924 | Dec. 31st, 1923 | Increase or Decrease | |
|---|---|---|---|---|
| Mortgage Bonds ..... | $89,288,500 | $82,622,500 | Inc. | $6,666,000 |
| Convertible Bonds ($436,000 not now convertible)..... | 6,365,300 | 12,170,300 | Dec. | 5,805,000 |
| Equipment Trust Obligations | 22,975,000 | 6,880,000 | Inc. | 16,095,000 |
| | $118,628,800 | $101,672,800 | Inc. | $16,956,000 |

## Road and Equipment

The additions to cost of road and equipment during the year, as shown in detail on page 22, were $25,884,024.84.

The total investment in road, equipment and miscellaneous physical property on December 31st, 1924, was $364,497,794.06. Of this total the sum of $43,431,068.56 was provided by appropriations from surplus and income as shown by the General Balance Sheet, and in addition $12,856,272.67 was provided by direct charges to income prior to July 1st, 1907, which are not included in the General Balance Sheet figures.

During the year 20.28 miles of double tracking on Big Sandy Line were completed. Additional double tracking was in progress on 34.24 miles of this line.

In March, 1924, an issue of $12,000,000 Equipment Trust 4½ per cent Certificates, Series of 1924, secured by 6,000 all steel hopper coal cars, 140,000 lbs. capacity, of an aggregate value of $15,118,-428.46, was sold at 97.317. These certificates are payable in twenty semi-annual instalments of $600,000 each from October 1st, 1924, to April 1st, 1934, inclusive, and are guaranteed principal and dividends by your Company.

In February, 1925, an issue of $6,000,000 Equipment Trust 4½ per cent. Certificates, Series of 1925, secured by 1,000 all-steel automobile box cars, 100,000 lbs. capacity, and 3,000 all-steel flat bottom gondola cars, 115.000 lbs. capacity, of an approximate aggregate value of $7.600,000, was sold at 98.86. These certificates are payable in ten annual instalments of $600,000 each from January 1st, 1926, to January 1st, 1935, inclusive, and are guaranteed principal and dividends by your Company. None of this equipment was received during the year 1924.

New equipment received and equipment rebuilt during the year were as follows:

4 switching locomotives (steam), rebuilt as saddle tank locomotives.
6 freight locomotives (steam).
2 locomotives (electric).
30 locomotive tenders.
1,000 all-steel gondola cars, 115,000 lbs. capacity, rebuilt.
1,443 all-steel hopper cars, 115,000 lbs. capacity, rebuilt.
6,000 all-steel hopper cars, 140,000 lbs. capacity.
25 steel underframe cabin cars.
2 scale test weight cars.
149 maintenance of way camp cars (built with used material).
196 maintenance of way flat cars (built with used material).
3 locomotive cranes.
1 oil sprayer car (built with used material).
1 rail and tie unloader (built with used material).
3 automobile trucks.

Of this equipment, 4 switching locomotives (steam), rebuilt as saddle tank locomotives, 25 steel underframe cabin cars, 77 maintenance of way camp cars, 21 maintenance of way flat cars, 1 oil sprayer car and 1 rail and tie unloader were built at your Roanoke Shops.

### Additions and Betterments to Way and Structures

163.28 miles of track were laid with 130-lb. rail, making the total amount of track now laid with this weight of rail 375.71 miles.

231,525 cubic yards of stone and 66,965 cubic yards of prepared slag were used in standard ballasting on the main line.

Passenger and freight stations were built or enlarged at Boones Mill, Ferrum, Galax and Bluefield, Va., and Roxboro, N. C. A mail and express building was erected at St. Paul, Va. Umbrella sheds were extended, office enlarged and an incinerator plant erected at the freight station, Roanoke, Va.

Campbell Avenue Station, Roanoke, Va., was improved and converted into a salvage warehouse. The commissary building at Roanoke, Va., was extended and a modern refrigerating plant installed therein, and a storehouse was erected at West Roanoke, Va.

The boiler shop at East Roanoke, Va., was reconstructed and enlarged, the new building being 380 feet long and 74 feet wide, and a lean-to was erected over five stalls at the roundhouse, East Roanoke, Va. A boiler and engine house, lavatory, tool room, boiler washing plant and office building were erected at Shenandoah, Va. A lumber and material shed was erected at East Radford, Va., and a machine shop and supply building at Richlands, Va. An engine inspector's house was erected at Bluefield, W. Va. A tool and air-brake room and storage building were erected and an additional cooling pond was constructed at Bluestone, W. Va. A tool and supply house was erected at Eckman, W. Va. A two-story warehouse was purchased and remodeled as an agent's dwelling at Elkhorn, W. Va. A shop building, consisting of engine house, boiler room, machine and blacksmith shop and an office room, was erected at Auville, W. Va. A car wheel shop and a yardmen's locker room were erected at Williamson, W. Va. A pipe and tin shop, material shed and iron rack were erected at Portsmouth, Ohio. A superheater and stoker repair shop, and an engine inspection shed were erected at Columbus, Ohio. Boiler washing plants were installed at Bluefield, Wilcoe and Williamson, W. Va., and Portsmouth and Columbus, Ohio.

An interlocking tower was erected at Chillicothe, Ohio, at the crossing of the Baltimore and Ohio tracks.

A 2,000-ton reinforced concrete electrically operated coaling station was erected at Prichard, W. Va. Coaling stations of Norfolk type were erected at Norton, Va., and Portsmouth, Ohio.

A 150-ton track scale was erected at Pembroke, Va.

Water softening plants were installed as follows: One of 100,-000 gallons per hour capacity at Williamson, W. Va., one of 55,000 gallons per hour capacity at Dorney, Ohio, one of 45,000 gallons per hour capacity at Coal Grove, Ohio, and one of 19,000 gallons per hour capacity at Auville, W. Va. Water softeners of 16,000 gallons per hour capacity were transferred from Portsmouth, Ohio, to Sardinia and Rarden, Ohio.

Steel water tanks of 200,000 gallons capacity, for treated water, were erected as follows: Two each at Portsmouth, Coal Grove and Dorney, Ohio, and one each at Auville and Vulcan, W. Va. Tanks of 100,000 gallons capacity were erected at Eckman and Naugatuck, W. Va., and Clifford, Ohio, and tanks of 50,000 gallons capacity were erected at Henry, Shenandoah, Chestnut Yard and Damascus, Va., Vannoys, N. C., and Auville and Lenore, W. Va.

Electric pumps were installed at Lynchburg, Kinney and Shenandoah, Va., Auville and Matewan, W. Va., and Columbus, Ohio. A 60-foot concrete pump well was constructed at Haverhill, Ohio.

Tanks of 8,000 gallons capacity, for storage of car reducing oil, were erected at Lambert Point and Roanoke, Va., Bluefield, W. Va., and Portsmouth, Ohio. Two steel tanks of 750,000 gallons capacity each, for storage of creosoted oil, were erected at Lambert Point, Va., and a pump-house and boiler-house were erected in connection with these tanks.

Electrically lighted switch lamps, replacing oil lamps, were installed between Evergreen and Bedford, East Radford and Cowan, and Radford and Bristol, Va., and between Chillicothe and Columbus, Ohio.

115-foot turntables were installed at Williamson, W. Va., and Portsmouth, Ohio.

1.53 miles of fencing were erected.

2,850 feet of light steel bridges were replaced with standard steel structures.

1.084 feet of light steel bridges were replaced by fit steel doubled.

Three concrete undergrade crossings were constructed.

Twenty-five grade crossings were eliminated during the year, twenty-three by road changes, one by undergrade crossing and one by purchase of property.

Extensive work was undertaken and satisfactory progress made in the construction of a reinforced concrete viaduct to eliminate grade crossings in the City of Petersburg, Va.

To facilitate the handling of materials by motor truck 4,085 square yards of concrete roadway and 2,364 square yards of penetration asphalt paving were laid in the shop yard at East Roanoke, Va.

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## Maintenance Expenditures

The expenses for Maintenance of Way and Structures were as follows:

| | 1924 | 1923 | Increase | Per Cent |
|---|---|---|---|---|
| Total Expenses | $14,801,043.80 | $12,406,593.28 | $2,394,450.52 | 19.30 |
| Average per mile of road operated | 6,605.57 | 5,542.89 | 1,062.68 | 19.17 |
| Average per mile of track operated | 3,407.85 | 2,859.95 | 547.90 | 19.16 |

The expenses for Maintenance of Equipment were as follows:

| | 1924 | 1923 | Increase or Decrease | Per Cent |
|---|---|---|---|---|
| Total Maintenance of Equipment Expenses. In which are included: | $22,794,104.22 | $25,137,890.28 | D. $2,343,786.06 | 9.3 |
| Steam Locomotives (Freight): Repairs, retirements and depreciation | 9,703,818.45 | 9,510,182.84 | I. 193,635.61 | 2.0 |
| Average per locomotive | 10,805.07 | 10,215.90 | I. 589.17 | 5.8 |
| Average per 1,000 locomotive miles | 589.00 | 544.34 | I. 44.66 | 8.2 |
| Electric Locomotives (Freight) (Double-Units): Repairs, retirements and depreciation | 261,387.48 | 309,041.22 | D. 47,653.74 | 15.4 |
| Average per locomotive | 18,670.53 | 25,753.44 | D. 7,082.91 | 27.5 |
| Average per 1,000 locomotive miles | 645.00 | 774.32 | D. 129.32 | 16.7 |
| Steam Locomotives (Passenger): Repairs, retirements and depreciation | 1,711,907.92 | 1,469,304.96 | I. 242,602.96 | 16.5 |
| Average per locomotive | 13,488.09 | 11,061.54 | I. 2,426.55 | 21.9 |
| Average per 1,000 locomotive miles | 326.05 | 282.10 | I. 43.95 | 15.6 |
| Freight Train Cars: Repairs, retirements and depreciation | 7,877,801.96 | 11,028,227.60 | D. 3,150,425.64 | 28.6 |
| Average per freight car | 188.63 | 244.91 | D. 56.28 | 23.0 |
| Average per 1,000 tons one mile | .65 | .99 | D. .34 | 34.3 |
| Passenger Train Cars: Repairs, retirements and depreciation | 987,233.54 | 928,733.57 | I. 58,499.97 | 6.3 |
| Average per passenger car | 1,997.44 | 1,816.31 | I. 181.13 | 10.0 |
| Average per 1,000 passengers one mile | 3.76 | 3.14 | I. .62 | 19.7 |
| Work Equipment: Repairs, retirements and depreciation | 355,977.35 | 257,549.46 | I. 98,427.89 | 38.2 |

There were in the shops undergoing and awaiting classified repairs at the close of the year 101 locomotives, or 9.9 per cent (49 of which needed only light repairs), 10 passenger cars, or 2.0 per cent, and 1,042 freight and work equipment cars, or 2.4 per cent.

## Traffic and Operating Revenue Comparisons

Comparison of traffic and operating revenue figures with those of the preceding year shows the following interesting changes:

| | | | |
|---|---|---|---|
| Number of passengers — 5,378,168 — decreased | 865,310 | | 13.86 per cent |
| Average haul of passengers — 48.77 — miles —increased | 1.35 | miles | 2.85 " |
| Revenue from passenger fares — $8,990,026.12 —decreased | $1,204,470.91 | | 11.81 " |
| Average rate per passenger per mile — 3.427 cents —decreased | 0.017 | cents | .49 " |
| Revenue freight carrier — 44,425,701 tons —increased | 1,850,818 | tons | 4.35 " |
| Average haul of freight — 273.04 miles — increased | 10.88 | miles | 4.15 " |
| Revenue from freight transportation — $84,795,438.14 —increased | $3,474,643.88 | | 4.27 " |
| Average rate per ton per mile — 0.699 cents —decreased | 0.030 | cents | 4.12 " |
| Average tons of revenue freight per train mile — 1,198.65 —increased | 122.26 | tons | 11.36 " |
| Shipments of Coal — 32,589,210 tons — increased | 3,111,795 | tons | 10.56 " |
| Shipments of Coke — 351,788 tons — decreased | 314,308 | tons | 47.19 " |
| Shipments of Ore — 509,035 tons — decreased | 284,135 | tons | 35.82 " |
| Shipments of Pig and Bloom Iron — 226,685 tons —decreased | 107,479 | tons | 32.16 " |
| Shipments of Lumber — 1,702,689 tons —increased | 114,341 | tons | 7.20 " |

## Electrification

The extension of the electrified system from Farm to Iaeger, W. Va., a distance of approximately 22 miles, has made good progress during the year, and it is expected will be completed and ready for service by April 1st, 1925.

Construction of foundations for overhead structures in connection with the further extension of the electrified district from Iaeger to Williamson, W. Va., is under way.

## Automatic Train Control

Automatic train control between Shenandoah, Va., and Hagerstown, Md., a distance of 107 miles, has been installed. The automatic signals, wayside train control apparatus and transmission line are completed and in service. A majority of the engines operating in this district has been equipped with train control device and are being used in the operation of trains. The automatic train control is in an experimental stage and full operation has not been established.

Your Company has secured from the Interstate Commerce Commission permission to install additional automatic train control on the remaining portion of the Shenandoah Division, Roanoke to Shenandoah, Va., a distance of 132 miles, instead of on the main line, but has as yet had no answer from the Commission to its application for relief from the second train control order of January 14th, 1924, requiring additional installations estimated to cost about $1,200,000.

## Timber Preserving Plant

Your Company's timber preserving plant at East Radford, Va., has had another year of successful operation. The timber treated during the year was as follows:

1,613,850 cross ties.
5,622,871 feet B. M. switch and bridge ties.
2,575,976 feet B. M. lumber.
71,284 lineal feet piling.
117,589 floor blocks.
2,935,000 tie plugs

## Operating Results

Operating Revenues in 1924, $97,707,310.15, showed an apparent increase of $2,115,627.80, or 2 per cent over 1923, but this was due to the inclusion, by direction of the Interstate Commerce Commission, of revenue of $3,126,635.91 from interline business for December, 1924, which, under your Company's former accounting practice, would have been taken into the figures for January, 1925, thus giving 1924 revenues the benefit of thirteen months' interline business. Had these figures not been included the Operating Revenues for the year would have been $94,580,674.24, a decrease of $1,011,008.11 or 1 per cent as compared with 1923. This decrease was due to a falling off of about 10 per cent in Passenger, Mail and Express Revenue, Freight Revenue showing a slight increase. There was a marked reduction in Operating Expenses, which were $2,723,762.35, or 4 per cent less than in 1923, Maintenance of Equipment showing a decrease of $2,343,770.07, or 9 per cent, and Transportation Expenses a decrease of $2,780,600.57, or 9 per cent, while Maintenance of Way and Structures increased $2,392,068.31, or 19 per cent. Payrolls decreased 3.9 per cent and cost of fuel decreased 27.6 per cent, while cost of other material and supplies increased 5.1 per cent.

Net Operating Revenues, exclusive of the additional interline revenue for December already referred to, were $24,705,565.68, an increase of $1,712,754.24, or 7.45 per cent over 1923, and with the exception of 1916 and 1917 the largest in the Company's history.

## Taxes

The charge for taxes was $7,400,000 and included certain accruals of income and excess profits taxes for previous years. The taxes applicable to 1924 increased $575,000, or 6.02 per cent, over 1923. This increase was due to the greater net earnings in 1924, an increased assessment on property in Ohio and a higher rate of levy in the States traversed by your System.

The charges for taxes and the yearly percentages of increase or decrease for the last nine years were as follows:

| Year Ending | | Charges for Taxes | Comparison With Preceding Year | | |
|---|---|---|---|---|---|
| December 31st, | 1916 | $2,480,000 | Increase | 22.59 | per cent. |
| " " | 1917 | 5,095,000 | Increase | 105.44 | " |
| " " | 1918 | 4,620,000 | Decrease | 9.32 | " |
| " " | 1919 | 4,976,000 | Increase | 7.71 | " |
| " " | 1920 | 4,400,000 | Decrease | 11.58 | " |
| " " | 1921 | 4,730,000 | Increase | 7.50 | " |
| " " | 1922 | 6,000,000 | Increase | 26.85 | " |
| " " | 1923 | 6,225,000 | Increase | 3.75 | " |
| " " | 1924 | *6,600,000 | Increase | 6.02 | " |

*Not including $800,000 of taxes for previous years.

The charge for taxes for the year 1924 applicable to that year was 166.13 per cent greater than for the year 1916.

The percentage of Net Operating Revenues consumed by taxes for the year ending December 31st, 1924, was 26.58 per cent. This compares with a percentage of taxes to Net Revenue from Operations of 9.56 per cent in 1916.

## Return Upon Investment

The following table shows for the last fourteen and one-half years the percentage ratio of Net Railway Operating Income to Railway Property Investment, including in Railway Property Investment the investment in Company mines producing fuel coal for use of Railway Company, expenditures for Additions and Betterments charged directly to Income or to reserves created from Income before July 1st, 1907, (from which date the accounting classifications of the Interstate Commerce Commission have required all similar expenditures to be charged to Property Investment accounts), and the value of Material and Supplies on hand at the close of each year, no Working Capital, however, being included. The Net Railway Operating Income upon which the percentages are based follows the definition in the Transportation Act and is made up of Net Revenue from Operations deducting Tax Accruals

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and Uncollectible Revenues and adding Equipment and Joint Facility Rents.

*For* 1918 *and subsequent years the table includes operating results of or for account of the Federal Government.*

| FOR | Railway Property Investment | Net Railway Operating Income | Return Upon Investment % |
|---|---|---|---|
| Fiscal years ending: | | | |
| June 30th, 1911 | $235,850,555.46 | $12,120,548.83 | 5.14 |
| June 30th, 1912 | 242,656,045.04 | 13,668,435.17 | 5.63 |
| June 30th, 1913 | 255,414,078.05 | 14,855,906.73 | 5.82 |
| June 30th, 1914 | 269,100,666.12 | 14,020,688.16 | 5.21 |
| June 30th, 1915 | 275,329,352.26 | 14,359,734.84 | 5.22 |
| June 30th, 1916 | 283,394,811.71 | 24,045,710.03 | 8.48 |
| Calendar years ending: | | | |
| December 31st, 1916 | 287,406,380.10 | 24,866,782.43 | 8.65 |
| December 31st, 1917 | 303,327,414.78 | 21,928,005.74 | 7.23 |
| December 31st, 1918 | 317,950,562.76 | 16,450,087.35 | 5.17 |
| December 31st, 1919 | 326,047,116.71 | 8,176,537.94 | 2.51 |
| December 31st, 1920 | 342,544,618.29 | 3,612,843.10 | 1.05 |
| December 31st, 1921 | 348,091,045.54 | 14,870,020.43 | 4.27 |
| December 31st, 1922 | 357,551,199.45 | 18,624,467.57 | 5.21 |
| December 31st, 1923 | 367,088,393.95 | 19,877,676.85 | 5.41 |
| December 31st, 1924 | 391,578,866.65 | *22,468,428.65 | 5.74 |

*See Note at foot of page 8 (of printed report), relative to inclusion of December, 1924, interline business.

### Settlement for Guaranty Period

On April 28th, 1924, by authority of your Board of Directors, settlement was made with the Bureau of Finance of Interstate Commerce Commission of your Company's claim against the United States Government under Section 209 of the Transportation Act, 1920, for the Guaranty Period, March 1st to August 31st, 1920. The Bureau of Finance found that the sum of $8,593,668.16 was due your Company in full settlement of this claim, of which amount $8,000,000 had previously been received as advance payments leaving a remainder of $593,668.16, which was paid on the date named. The adjustments made necessary by this settlement are reflected in the Balance Sheet.

### Federal Valuation

The cost to your Company of the valuation of its property from June 30th, 1916, to December 31st, 1924, has been $862,255.07.

On July 1st, 1924, the Interstate Commerce Commission announced a Tentative Valuation of the property, (Valuation Docket No. 343) as of June 30th, 1916, at $237,392,000. A protest for errors and omissions was prepared and filed on behalf of your Company. Hearings have been had before an Examiner of the Commission and the Company's testimony put in to support the protest. The case will be briefed and argued to the Commission in 1925.

### Relief and Pension Department

At the end of the year the Relief Fund had 20,557 members, equivalent to 71.12 per cent of the total number of employees, an increase in the year in number of members of 870 and a decrease of 0.16 in percentage of members to employees. The Fund paid during the year in death benefits $145,250.00, and in sickness and accident benefits $328,487.25. In the same period the Company paid for maintenance expenditures of the Relief and Pension Department $124,633.72, and the members of the Fund contributed $715,931.03. Interest on monthly balances in the hands of the Treasurer of the Company amounted to $3,468.29, and interest from investments to $22,204.94. A financial statement of the Relief Fund, which has been audited by a Committee from the contributing members, will be found on page 27 of this report. During the year $40,000 United States Second Liberty Loan 4¼ per cent Bonds were sold and the proceeds reinvested in securities bearing a higher interest rate.

On December 31st the number of employees on the pension roll was 532. The total amount paid in pensions for the year was $251,403.13.

### Buck Creek Branch

Your Company acquired from the Kermit Warfield Bridge Company 0.3 of a mile of railroad, extending from Kermit, W. Va., on your Company's main line, to a point in the middle of Tug Fork of Big Sandy River, where connection is made with the line of the Buck Creek Railroad Company. The cost of this branch to your Company, including portion of bridge over Tug Fork of Big Sandy River, was $97,473. Application has been made to the Interstate Commerce Commision for the necessary authority to operate said branch.

### Buck Creek Railroad Company

The Buck Creek Railroad Company was organized November 10th, 1924, under the laws of the State of Kentucky, to purchase and operate a railroad about 1.26 miles in length in Martin County, Ky., formerly the property of the Himler Coal Company and Kermit Warfield Bridge Company, reaching important coal deposits. The road extends from a point in the middle of Tug Fork of Big Sandy River through Martin County, Ky., along the valley of Buck Creek. The entire line, including portion of bridge over Tug Fork of Big Sandy River, was acquired at a cost of $87,500.

The capital stock of the Company consists of 100 shares of $100 each, of which 65 shares are owned by your Company.

Application has been made by your Company to the Interstate Commerce Commission for authority to lease the railroad, property and franchises of the Buck Creek Railroad Company.

### Pocahontas Coal and Coke Company

Under the sinking fund provision of the Pocahontas Coal and Coke Company Purchase Money First Mortgage, dated December 2nd, 1901, the sum of $320,854.08 accrued from royalties on coal mined during the calendar year 1924. From the beginning of the operation of the sinking fund in 1906 to December 31st, 1924, the accruals from royalties have aggregated $4,983,389.45 and those from sales of lands $198,099.90, a total of $5,181,489.35 applicable to the purchase and retirement of mortgage bonds. Through this fund $5,515,000 of bonds had been purchased and canceled to December 31st, 1924. Additional bonds amounting to $347,000 were purchased and canceled in February, 1925.

A further payment of $351,000 has been made on account of indebtedness incurred in previous years to meet the fixed charges.

The consolidation of the Company's properties through purchases of interior tracts and exchanges of lands with other companies, and the work of completing titles, surveying, monumenting and mapping, continue.

### Winston-Salem Terminal Company

On December 16th, 1915, the Winston-Salem Union Station Company was incorporated to construct and operate a union station at Winston-Salem, N. C., the capital stock being held equally by your Company, the Southern Railway Company and the Winston-Salem Southbound Railway Company. An issue of $250,000 First Mortgage Bonds was sold and property was acquired for the station building. The station, however, was never built, the site selected being found unsuitable. In 1922, the project was revived and a new company—the Winston-Salem Terminal Company—was incorporated on March 1st, 1922, under the laws of North Carolina. A new location, satisfactory to the railway companies and to the city, was selected, the necessary property acquired and the terminal is now under construction.

### Lease to Pennsylvania Railroad Company

At a meeting of your Board of Directors held March 12th, 1924, a communication was received from the Pennsylvania Railroad Company suggesting the advisability of a lease of the Norfolk and Western by the Pennsylvania Railroad Company on terms which would preserve the identity of the Norfolk and Western, but after conference between Committees representing both Companies it was found impossible to agree upon terms which would be mutually satisfactory and negotiations ceased.

### Industries

Among the new local industries are the following:

17 manufactories of mineral, metal and other products,
23 manufactories of lumber products,
22 manufactories of farm implements and farm products,
4 coal mines.

At the close of the year there were 221 companies organized for producing coal and coke on your Company's lines, with a total of 311 separate mines, of which 231 were in actual operation.

Of the 16 iron furnaces with a total daily capacity of 3,355 tons of pig, 4 having a total daily capacity of 1,450 tons were in blast.

### Obituary

J. H. Clemmitt, Purchasing Agent, died suddenly on May 23rd, 1924. Mr. Clemmitt had served the Company in the Purchasing Department for more than twenty-seven years and had been Purchasing Agent since October 1st, 1918.

### Changes in Board of Directors

At the meeting of the Board of Directors held March 25th, 1924, the vacancies in the Board occasioned by the death of John P. Green and the resignation of Childs Frick were filled by the election of A. J. County and Theodore W. Reath.

### Changes in Organization

On April 30th, 1924, pursuant to the Company's pension regulations, N. D. Maher, President of the Company, was retired.

A. C. Needles, formerly Vice-President in charge of Operation and Traffic, was elected President effective May 1st, 1924.

W. J. Jenks, formerly General Manager, was appointed Vice-President in charge of Operation; B. W. Herrman, formerly Assistant Freight Traffic Manager, was appointed Vice-President in charge of Traffic; J. E. Crawford, formerly Assistant General Manager, was appointed General Manager; and J. M. Rodgers, formerly Statistican, was appointed General Auditor, these changes all being effective May 1st, 1924.

Clyde Cocke, Asistant Purchasing Agent, was appointed Pur-

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chasing Agent to fill the vacancy occasioned by the death of Mr. Clemmitt, effective August 1st, 1924.

There has been a fine spirit of co-operation and loyal service on the part of the officers and employees throughout the year which has aided the Management in producing the satisfactory results set forth in this report.

By order of the Board of Directors,
A. C. NEEDLES, *President.*

## NORFOLK AND WESTERN RAILWAY COMPANY CONDENSED GENERAL BALANCE SHEET, DEC. 31st, 1924

### ASSETS

| | | | Comparison with Dec. 31st, 1923 |
|---|---|---|---|
| **Investments:** | | | |
| Investment in Road and Equipment: | | | |
| Road | $255,829,293.97 | ..... | I. $12,233,981.05 |
| Equipment | 104,834,254.10 | ..... | I. 13,650,043.79 |
| | | $360,663,548.07 | |
| Deposits in lieu of mortgaged property sold | ..... | 13,685.26 | I. 5,506.32 |
| Miscellaneous Physical Property | ..... | 3,834,245.99 | D. 10,645.89 |
| Investments in Affiliated Companies: | | | |
| Stocks | $2,086,651.42 | ..... | I. 6,780.00 |
| Bonds | 311,433.75 | ..... | I. 24,541.75 |
| Advances | 4,403,344.63 | ..... | D. 9,155,800.98 |
| | | 6,801,429.80 | |
| Other Investments: | | | |
| Stocks | $4,696.40 | | |
| Bonds | 9,273,368.22 | ..... | D. 4,187,992.59 |
| | | 9,278,064.62 | |
| Total | ..... | $380,590,973.74 | |
| **Current Assets:** | | | |
| Cash | $4,618,607.71 | ..... | I. 466,606.43 |
| Loans and Bills Receivable | 167,924.06 | ..... | D. 90,795.14 |
| Traffic and Car Service Balances Receivable | 4,436,729.86 | ..... | I. 2,818,750.35 |
| Net Balance Receivable from Agents and Conductors | 617,446.18 | ..... | D. 103,616.32 |
| Miscellaneous Accounts Receivable | 7,740,229.56 | ..... | I. 1,290,009.55 |
| Material and Supplies | 13,235,509.08 | ..... | D. 1,401,568.79 |
| Interest and Dividends Receivable | 51,304.34 | ..... | I. 22,968.11 |
| Other Current Assets | 36,712.93 | ..... | I. 1,256.45 |
| Total | ..... | 30,904,463.72 | |
| **Deferred Assets:** | | | |
| Working Fund Advances | $9,243.51 | ..... | I. 14.66 |
| Norfolk and Western Railway Company and Pocahontas Coal and Coke Company Joint Purchase Money Mortgage Bonds | 14,485,000.00 | ..... | D. 384,000.00 |
| Securities held in trust for Relief and Pension Department | 723,000.00 | ..... | I. 236,000.00 |
| Other Accounts | 10,000.00 | ..... | D. 911.89 |
| Total | ..... | 15,232,243.51 | |
| **Unadjusted Debits:** | | | |
| Rents and Insurance Premiums paid in Advance | $44,416.79 | ..... | I. 6,986.34 |
| Discount on Funded Debt | 1,854,710.16 | ..... | I. 1,302,164.72 |
| Other Unadjusted Debits | 495,673.76 | ..... | I. 104,390.01 |
| Securities Issued or Assumed—Unpledged— | | | |
| Par value of holdings at close of year | $1,013,100.00 | | |
| Total | ..... | 2,394,800.71 | |
| | | $429,122,481.68 | |

### LIABILITIES

| | | | Comparison with Dec. 31st, 1923 |
|---|---|---|---|
| **Capital Stock:** | | | |
| Adjustment Preferred | $23,000,000.00 | | |
| Held in Treasury | 7,700.00 | | |
| | | $22,992,300.00 | |
| Common | $134,796,700.00 | | |
| Held in Treasury | 2,400.00 | | |
| | | 134,794,300.00 | |
| Total | ..... | ..... | I. $5,800,000.00 |
| | | $157,786,600.00 | |
| **Long Term Debt:** | | | |
| Mortgage Bonds | $89,301,500.00 | | |
| Held in Treasury | 13,000.00 | | |
| | | $89,288,500.00 | |
| Convertible Bonds | $6,370,300.00 | ..... | I. 6,666,000.00 |
| Held in Treasury | 5,000.00 | | |
| | | 6,365,300.00 | |
| Equipment Obligations | $23,960,000.00 | ..... | D. 5,805,000.00 |
| Held in Treasury | 985,000.00 | | |
| | | 22,975,000.00 | |
| Total | ..... | ..... | I. 16,095,000.00 |
| | | 118,628,800.00 | |
| **Current Liabilities:** | | | |
| Traffic and Car Service Balances Payable | $180,279.18 | ..... | I. 44,441.51 |
| Audited Accounts and Wages Payable | 4,042,860.67 | ..... | D. 1,193,916.30 |
| Miscellaneous Accounts Payable | 635,207.73 | ..... | I. 135,385.03 |
| Interest Matured Unpaid | 59,697.00 | ..... | I. 4,785.00 |
| Dividends Matured Unpaid | 5,533.25 | ..... | D. 4,841.50 |
| Funded Debt Matured Unpaid | 6,000.00 | | |
| Unmatured Dividends Declared | 229,923.00 | | |
| Unmatured Interest Accrued | 1,676,476.00 | ..... | I. 252,135.00 |
| Total | ..... | 6,835,976.83 | |
| **Deferred Liabilities:** | | | |
| Securities held in Trust for Relief and Pension Department | $728,000.00 | ..... | I. 236,000.00 |
| Liability for Equipment under Equipment Trust "1923" | ..... | ..... | D. 9,345,260.27 |
| Other Accounts | 203,515.74 | ..... | I. 83,340.43 |
| Total | ..... | 931,515.74 | |
| **Joint Liabilities:** | | | |
| Norfolk and Western Railway Company and Pocahontas Coal and Coke Company Joint Purchase Money Mortgage Bonds | ..... | 14,485,000.00 | D. 384,000.00 |
| **Unadjusted Credits:** | | | |
| Tax Liability | $4,143,295.35 | ..... | I. 677,408.34 |
| Insurance and Casualty Reserves | 794,157.84 | ..... | I. 225,186.34 |
| Accrued Depreciation—Road | 10,749,306.23 | ..... | I. 860,805.13 |
| Accrued Depreciation—Equipment | 22,720,546.79 | ..... | D. 431,874.13 |
| Accrued Depreciation—Miscellaneous Physical Property | 495,271.61 | ..... | I. 129,829.90 |
| Other Unadjusted Credits | 759,404.67 | ..... | D. 179,848.75 |
| Total | ..... | 39,661,982.49 | |
| **Corporate Surplus:** | | | |
| Additions to Property through Income and Surplus:— | | | |
| Road | $20,126,042.29 | | I. 56,436.59 |
| Equipment | 23,305,026.27 | | |
| | | $43,431,068.56 | |
| Profit and Loss Balance | 47,361,538.06 | ..... | I. 2,912,655.61 |
| Total | ..... | 90,792,606.62 | |
| | | $429,122,481.68 | |

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# Railway Officers

## Executive

**J. L. Beven,** assistant to the president of the Illinois Central, with headquarters at Chicago, has been elected vice-president, with the same headquarters. Mr. Beven was born on February 17, 1887, at McComb, Miss., and entered railway service on October 1, 1899, as a clerk in the operating department of the Illinois Central. He was later promoted to chief clerk and held that position until 1915 when he was promoted to trainmaster. Mr. Beven was promoted to division superintendent in 1917 and in 1918, under the railroad administration, was appointed assistant federal manager of the Illinois Central. At the termination of federal control on March 1, 1920, he was appointed assistant to the senior vice-president, with headquarters at Chicago. In July, 1923, he was promoted to assistant to the president, in which position he remained until his recent election to vice-president.

J. L. Beven

## Financial, Legal and Accounting

**S. M. Copp,** who has been promoted to general claim agent of the Illinois Central, with headquarters at Chicago, as reported in the *Railway Age* of March 21, was born on April 2, 1884, at New Orleans, La., and entered railway service in 1902 as a stenographer in the operating department of the New Orleans & Northeastern, which is now a part of the Southern. He was appointed chief clerk to the general manager of the New Orleans & Great Northern in 1904 and was promoted to claim agent a short time later. He entered the service of the Illinois Central in September, 1909, as claim agent at Memphis, Tenn., and was promoted to district claim agent, with the same headquarters, in 1912. He was promoted to assistant general claim agent of the Northern and Western lines, with headquarters at Chicago, in October, 1919, which position he held until his recent promotion to general claim agent, with the same headquarters.

S. M. Copp

H. J. **Freeman,** chief clerk to the freight claim agent of the Pennsylvania at Philadelphia, has been appointed assistant freight claim agent at Philadelphia. **R. E. Hamilton,** freight claim agent at Pittsburgh, has been appointed district freight claim agent at that point. **A. P. Hickox,** freight claim agent at St. Louis, has been transferred to New York as district freight claim agent. **C. Geyer,** freight claim agent at Chicago, has been named district freight claim agent at that place. **J. A. Downing,** chief clerk to the freight claim agent at St. Louis, has been appointed district freight claim agent at that point. **A. L. Lawn,** district freight claim representative at Baltimore, Md., has been appointed district freight claim agent, with the same headquarters. The jurisdiction of **R. L. Franklin,** freight claim agent, Eastern region, at Philadelphia has been extended to cover general supervision of freight claims over the entire Pennsylvania System. His title will remain unchanged.

**A. H. Reder** has been appointed auditor of freight accounts of the Florida East Coast. **J. L. McCartney** has been appointed assistant auditor, in charge of general accounts and disbursements, and **G. G. Lee** has been appointed assistant auditor, in charge of passenger accounts, of the same road.

**P. M. Gatch,** general claim agent of the Illinois Central, with headquarters at Chicago, has been promoted to chief general claim agent, with the same headquarters. He will take over the work of which H. B. Hull, vice-president, who died on March 17, was in charge. Mr. Gatch was born on September 23, 1876, in Cincinnati, Ohio, and graduated from Cumberland University in June, 1898. After devoting several years to the study of law, Mr. Gatch entered railway service in June, 1901, as claim agent of the Illinois Central, with headquarters at Decatur, Ill. He was transferred to Evansville, Ind., in 1907, and remained there for six years. In May, 1913, he was promoted to assistant general claim agent, with headquarters at Chicago, and continued in that capacity until February 1, 1925, when he was promoted to general claim agent, with the same headquarters. Mr. Gatch held that position for only a little over a month, until his latest promotion to chief general claim agent.

P. M. Gatch

## Operating

**E. F. Gorman,** superintendent of terminals of the Grand Trunk, with headquarters at Detroit, Mich., has been appointed acting assistant to the chief of transportation of the Canadian National, with headquarters at Montreal, Quebec.

**G. P. Brock,** assistant to the general manager of the Gulf, Mobile & Northern, with headquarters at Mobile, Ala., has been promoted to assistant general manager, with headquarters at Laurel, Miss., and will assume the duties of H. Gross, superintendent, who has resigned to enter the service of another company.

## Mechanical

**J. Archie Jones** has been appointed general air brake supervisor of the Delaware & Hudson, succeeding H. A. Flynn, resigned to enter the service of the New York Air Brake Company.

**M. R. Reed,** master mechanic of the Pennsylvania at Logansport, Ind., has been appointed assistant general superintendent of motive power of the Northwestern region, with headquarters at Chicago.

**R. G. Bennett,** superintendent of motive power of the Eastern Ohio division, Central region, of the Pennsylvania, has been appointed general superintendent of motive power of the

Southwestern region, with headquarters at St. Louis. **W. B. Porter,** assistant engineer of motive power of the Eastern region, has been appointed master mechanic at Logansport, Ind.

**F. G. Grimshaw,** general superintendent of motive power of the Southwestern region of the Pennsylvania, with headquarters at St. Louis, Mo., has been promoted to works manager at Altoona, Pa., succeeding **P. F. Smith, Jr.,** who has been granted a leave of absence from active duty owing to ill health. Mr. Grimshaw was born on November 26, 1878, at Paterson, N. J. He attended Cornell University, and entered railway service on January 9, 1902, as a special apprentice in the Pennsylvania's shops at Altoona, Pa. From March to May, 1905, he was motive power inspector at Altoona. He then became a yard clerk on the Pittsburgh division and in May, 1906, was promoted to assistant yardmaster. From August of the same year to June, 1907, he was assistant master mechanic of the Monongahela division. He then became master mechanic of the West Jersey & Seashore and served in that capacity until September, 1912, when he was appointed assistant engineer of motive power of the Western Pennsylvania division. In November, 1914, he became assistant engineer of electrical equipment of the Philadelphia Terminal division. He was appointed superintendent of motive power of the New Jersey division in July, 1917, and in May, 1918, was appointed assistant to the general manager at Philadelphia. In March, 1920, he became superintendent of the Eastern division and served in that capacity for a year, when he was appointed superintendent of motive power of the Eastern Ohio division at Pittsburgh, Pa. In June, 1924, he became general superintendent of motive power of the Southwestern region, which position he held until his recent promotion.

F. G. Grimshaw

**O. P. Reese,** assistant general superintendent of motive power of the Northwestern region of the Pennsylvania, at Chicago, has been appointed superintendent of motive power of the Eastern Ohio division, Central region, succeeding R. G. Bennett, who has been promoted to general superintendent of motive power of the Southwestern region. Mr. Reese was born on May 29, 1876, at Louisville, Ky., and was graduated from Purdue University in 1898. He entered railway service in August, 1898, as an apprentice for the Louisville & Nashville, which position he held until September, 1900, when he became a draftsman for the Pennsylvania at Allegheny, Pa. From September, 1900, to September, 1901, he was engaged on special work for that road at Fort Wayne, Ind., and from the latter date to August, 1903, he was a special apprentice. In August, 1903, he became gang foreman at Allegheny, Pa., and held this position until February, 1904. From this time on he held the following positions consecutively: February, 1904, to December, 1904, foreman of tests for the Pennsylvania at the St. Louis World's Fair; December, 1904, to May, 1905, motive power inspector; May, 1905, to May, 1906, general division foreman; June, 1908, to June, 1910, division master mechanic; June, 1910, to September, 1911, assistant engineer of motive power; September, 1911, to May, 1915, master mechanic; May, 1915, to January, 1917, assistant engineer of motive power in the office of the general superintendent of motive power of the same road; January, 1917, to March, 1920, superintendent of motive power of the Central system of the Lines West of Pittsburgh, at Toledo, Ohio; March, 1920, to April, 1921, the same position on the Northern Ohio division. From April, 1921, to February, 1924, Mr. Reese was superintendent of motive power of the Illinois division, and from February, 1924, until his recent promotion he has been assistant general superintendent of motive power of the Northwestern region at Chicago.

O. P. Reese

## Engineering, Maintenance of Way and Signaling

**Leonard L. Sparrow,** principal assistant engineer of the Atlantic Coast Line, with headquarters at Wilmington, N. C., has been appointed engineer of statistics, with the same headquarters. He has been succeeded as principal assistant engineer by **P. R. Boese.** Mr. Sparrow was born on November 17, 1872, at Philadelphia, Pa., and was educated at the University of Tennessee. He entered railway service in 1895, as a rodman in the maintenance of way department of the Baltimore & Ohio, which position he held until 1899, when he became resident engineer of that road, at the Thomas tunnel between Pittsburgh and Wheeling. In 1901, he became assistant engineer in charge of preliminary surveys, and in 1902, was made resident engineer on grade reduction and double tracking on the Connellsville division, and also on the construction of low grade line and the Bentford tunnel. From May, 1904, to August, 1907, he was in charge of construction of the terminals on the Atlantic Coast Line, at Jacksonville, Fla., and from August, 1907, to May, 1908, was engineer of roadway on the First division of the same road. In May, 1908, he became engineer of roadway on the Third division, which position he held until September, 1917, when he was appointed office engineer in the chief engineer's office, at Wilmington, N. C. In September, 1919, he became principal assistant engineer on this road, which position he held until his recent appointment as engineer of statistics.

L. L. Sparrow

# Obituary

**Charles M. Woodward,** superintendent of the Berkshire division of the Boston & Maine, with headquarters at North Adams, Mass., died on March 31. Mr. Woodward was 52 years of age and had been connected with the Boston & Maine since 1912.

**R. E. Berger,** auditor of the Wabash, with headquarters at St. Louis, Mo., died in that city on March 28 after an illness with pneumonia of less than two weeks. Mr. Berger was born in 1861 and entered railway service in 1883 as a clerk in the freight department of the Wabash. He was promoted successively to chief clerk in the freight accounting department, auditor in the freight accounting department and assistant auditor. He was promoted to auditor in 1920 and held that position until his death. Mr. Berger was active in the Railway Accounting Officers' Association and served as president of that organization in 1918.